Basement Impact Assessment: groundwater

128-130 Grafton Road, NW5 4BA

Prepared for: Ground and Projects Consultants Ltd
53 King Street
Manchester
M2 4LQ

Date: 02/04/2019
Status: Draft
Reference: 30206R2D1

Prepared by: H Fraser Consulting Ltd

H FRASER CONSULTING LTD
Shrewsbury Environmental Technology Centre, The Pump House, Coton Hill, SY1 2DP
T: 01743 352797 M:07527 006625 E:hfraser@hfraserconsulting.co.uk www.hfraserconsulting.co.uk
Registered Company No 07712855

H Fraser
CONSULTING
CONTAMINATED LAND
AND HYDROGEOLOGY

DOCUMENT HISTORY AND STATUS

Revision	Date	Purpose/Status	File Ref	Author	Check	Review
30206R1D1	22/03/2019	Draft	30206R1D1	Hannah Fraser	Hannah Fraser	Hannah Fraser

DOCUMENT DETAILS

Last saved	10/04/2019 09:26:00
Author	Hannah Fraser
Project Director	Hannah Fraser
Project Number	30206
Project Name	128-130 Grafton Road
Planning Reference No.	

EXECUTIVE SUMMARY

The site location is 128 – 130 Grafton Road, London, NW5 4BA, as shown on Figure 2.1.

The current site arrangement is a single storey industrial building/warehouse. It is proposed to demolish the structures existing on site. Site elevation is estimated as approximately 37 m aOD.

The proposed development comprises a five-storey residential building with a basement and roof terrace. The basement would be approximately 3 m deep and would include sunken terraces at the front and rear. The proportion of hardstanding at the site is not anticipated to change.

The following assessments are presented:

- Desk Study
  - A groundsure report is presented as Appendix A
  - Site plans are presented as Appendix B
  - Site investigation data are presented as Appendix C
- Screening
- Scoping
- Impact Assessment

The author of this assessment is Hannah Fraser, Director of H Fraser Consulting Ltd, who is a Chartered Geologist with 23 years' experience as a hydrogeologist and consultant.

The site is underlain by Made Ground, and variably by Head Deposits; both strata comprise sandy gravelly clay. These are underlain by London Clay, encountered between 1.8 m and 2 m below ground level. Groundwater flow within the London Clay is generally negligible, although some groundwater movement occurs on discrete sand partings or other discontinuities. A BGS record from a borehole 125m northeast of the site recorded a groundwater seepage in the made ground at 2.8 m (31.2m OD), and a groundwater level was measured at 1 m (33m OD). Groundwater was not observed during recent site investigations at the subject site.

The BIA for groundwater has concluded that the impacts of the basement on the hydrogeological setting are likely to be negligible, due to the lack of observed groundwater during site investigations, the likely low to negligible groundwater flows in the London Clay, and the lack of basements in neighbouring properties. Groundwater has the potential to affect the basement by groundwater flow to the basement excavation during construction and by seepage/soil moisture impact to the finished basement structure. The drainage arrangements for the site are not known. The following mitigation measures are proposed:

- Provision should be made to keep the basement excavation dry during construction
- The basement should be waterproofed in accordance with BS8102
- The drainage arrangements for the site should be in accordance with the principles of Sustainable Drainage, but should not seek to discharge water to ground.

The residual impacts of the basement on the hydrogeological environment, and of groundwater on the completed basement, are considered to be negligible.

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1 INTRODUCTION

Ground and Projects Consultants Ltd (GPC) has instructed H Fraser Consulting Ltd (HFCL) to provide the hydrogeological aspects of a Basement Impact Assessment at the following property:

128-130 Grafton Road, NW5 4BA.

The site is in the London Borough of Camden.

1.1 Objective

The objective of this report is to provide the hydrogeological aspects of a a Basement Impact Assessment at 128-130 Grafton Road, NW5 4BA. This report updates a screening and scoping study undertaken in 2017 (ref 30206R1).

1.2 Scope of works

The following works have been undertaken:

- Review of previous reporting
- Review of site investigation data
- Impact assessment
- Reporting

The work has been undertaken in accordance with the requirements of London Borough of Camden's (LBC) Planning Guidance 'Basements' (March 2018) and Arup's 'Geological Hydrogeological and Hydrological Study, Guidance for Subterranean Development' (Arup, 2012, referred to throughout this report as the GHHS).

This assessment is limited to an assessment of the hydrogeological aspects of the proposed development and does not purport to make any comment on surface water flooding, hydrology, contamination or pollution, engineering, slope stability, design or construction issues.

1.3 Authors

The work has been undertaken by Hannah Fraser, Director of HFCL, who is a Chartered Geologist with 23 years' experience as a hydrogeologist and consultant.

1.4 Sources of information

The following sources of information have been used to compile this report

- A Groundsure report for the site (Appendix A);
- Geological information (Geology of Britain Viewer, GeoIndex, Geological Lexicon);
- Mapping and aerial photography (Streetmap, Googlemaps, Bing Maps and GoogleEarth)
- Site investigation data provided by GPC
- LB Camden, Planning Guidance (CPG) – Basements (March 2018);
- LB Camden, Camden Geological, Hydrogeological and Hydrological Study – Guidance for Subterranean Development (produced by Arup, 2010);
- LB Camden, Local Plan Policy A5 Basements (2017);
- LB Camden's Audit Process Terms of Reference

1.5 Existing and proposed development

The existing structure is a single-storey terraced industrial building/warehouse comprising a ground floor and a mezzanine floor, forecourt area and off-street parking for approximately. 5 vehicles. It is currently occupied by E & D Scaffolding Co Ltd. The ground cover at the front of the property comprises hardstanding.

The property adjoins a large residential scheme on its eastern side (no. 126). There is a single-storey industrial building "Spring Lighting" on its western side (no. 132-134). The property backs onto a significantly larger building fronting Spring Place, which is in residential use. Aerial photography indicates that there is no exterior space at the rear of the property.

The site area is 258m^2.

It is proposed to construct a five-storey residential building with a basement and roof terrace. The basement will be approximately 3 m deep. Sunken terraces are proposed at basement level, at the front and the rear, and will be paved. The footprint of the basement including sunken terraces is approximately 14.1 m wide by 16.8 m deep with a resultant area of around 237 m^2 (the dimensions above have been provided by GPC).

Plans of the proposed development are shown in Appendix B.

2 DESK STUDY

The site is located at 128-130 Grafton Road, NW5 4BA, at national grid reference 528488, 185034.

The ground elevation locally is estimated at around 37m OD. Across the wider area, the topography falls to the southeast from 96m OD at Parliament Hill, located approximately 1.4km to the northwest.

The site location is shown in Figure 2.1.

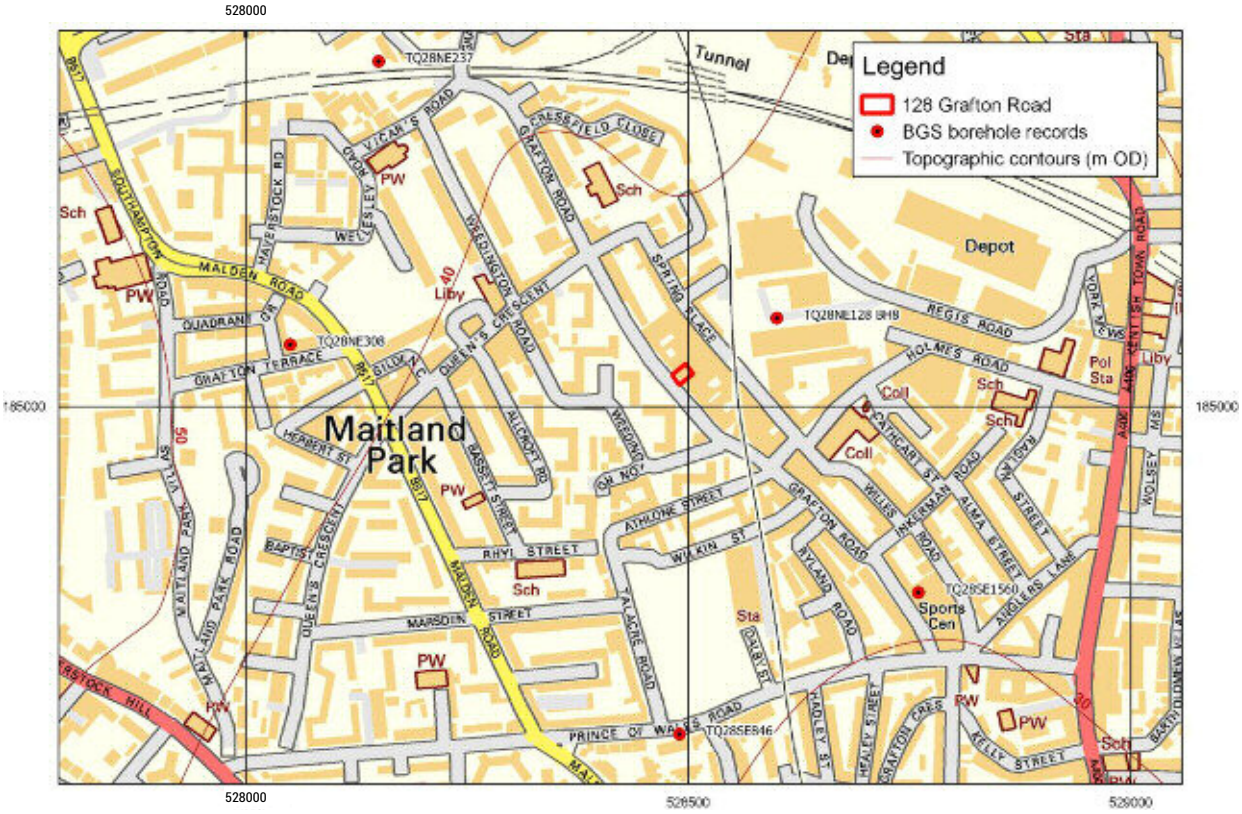


Figure 2.1 Site location

Contains Ordnance Survey data © Crown copyright and database right 2017

2.1 Geology

Geological mapping[1] shows the area to be underlain by the London Clay, which is extensive across the area. The London Clay mainly comprises bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay. It commonly contains thin courses of carbonate concretions ('cementstone nodules') and disseminated pyrite. It also includes a few thin beds of shells and fine sand partings or pockets of sand, which commonly increase towards the base and towards the top of the formation. At the base, and at some other levels, thin beds of black rounded flint gravel occur in places. Glauconite is present in some of the sands and in some clay beds, and white mica occurs at some levels.[2]

Table 2.1 presents geological data from selected BGS borehole records,[3] and Figure 2.1 shows the location of the boreholes. The borehole logs confirm that the area is underlain by London Clay, with 0 m to 2.9 m of fill/Made Ground above.

[1] http://mapapps.bgs.ac.uk/geologyofbritain/home.html
[2] http://www.bgs.ac.uk/lexicon/lexicon.cfm?pub=LC
[3] http://mapapps2.bgs.ac.uk/geoindex/home.html

2.2 Hydrogeology

The London Clay is classified by the Environment Agency as unproductive strata.[4]

Groundwater was not recorded in three of the five BGS borehole logs. At TQ28SE1560, groundwater was encountered at 54.87 m, in the Reading Beds underlying the London Clay. At TQ28NE128 (BH8), a groundwater seepage was encountered at 2.8 m (31.2 m OD), and a groundwater level was measured at 1 m (33 m OD) on 12 January 1979.

The closest groundwater abstraction is 449 m to the south east at Kentish Town Sports Centre, which is also the closest potable water abstraction. There are no source protection zones within 500 m of the site. [5]

BGS records hold three well records, two at St Pancras Baths (TQ28/48A and TQ28/48B and one at Alexandra House, Haverstock Hill (TQ28/47). All three wells target the Chalk aquifer, underlying the London Clay. [6]

There are no groundwater flooding susceptibility areas within 50 m of the site. The area is not considered to be prone to groundwater flooding based on rock type.

2.3 Hydrology

A culvert lies 185 m north east of the site. There are no surface water features within 250 m of the site.

There are no rivers within 500 m of the site. There are no surface water abstractions within 1000 m of the site.

The site lies approximately 190 m west and 360 m east of two tributaries of the former River Fleet. It may be that the culvert 185 m north east is in fact the now culverted River Fleet.

There are no springs shown on OS mapping.

2.4 Planning records

The Camden online planning database has been searched to find available information about basements at neighbouring properties.

Planning consent was granted in 1997 at 126 Grafton Road for '*the erection of a four-storey building to provide four flats with associated car parking spaces on the ground floor, plus the provision of residential amenity space to the rear of the adjoining office building at nos. 116-12.*' Subsequently planning permission was refused at appeal in 2017 for '*Demolition of existing two-storey industrial building (Class B8) and erection of a 5-storey plus basement, residential building comprising 6 x 2-bed and 3 x 3-bed flats (Class C3)*'.

There are three planning applications listed for 132-134 Grafton Road, all of which were refused.

There are several planning applications for 10 Spring Place, and 8-9 Spring Place.

There is no indication of a basement at any of the adjoining properties within the planning records viewed.

[4] Groundsure report GS-4228183
[5] Ground sure report-3836241
[6] http://mapapps2.bgs.ac.uk/geoindex/home.html

Table 2.1 BGS borehole records

Ref	Name	Easting	Northing	Description
TQ28NE128 BH8	NORTH LONDON-SKILL CENTRE	528600	185100	Ground level at 34m OD. FILL: cemented bricks (possibly old foundation) to 0.3 m, FILL: ash and brick rubble to 1 m, FILL: silty clay with small brick fragments and topsoil to 2.9 m, CLAY: silty slightly organic clay to 4.5 m, CLAY: silty brown grey with scattered patches of orange/brown fine sand/silt (well fissured) to 10 m, CLAY: silty grey well fissured and occasionally laminated to 21 m. Water seepage at 2.8m (31.2m OD). Groundwater level at 1m (33m OD) on 12 January 1979.
TQ28SE1560	ST PANCRAS BATHS, PRINCE OF WALES ROAD	528760	184790	London Clay - brown clay to 6.1 m, London Clay - blue clay and septaria to 39.32 m, Reading beds to 59.14 m, Thanet Sands to 61.88 m, Upper Chalk to 137.16 m. Water level at 54.87 m.
TQ28SE846	HARMOOD ST. CAMDEN 2	528490	184630	Ground level at at 30.05m OD. Fill (tarmac) to 0.35 m, fill (brick rubble) to 0.9 m, soft black silty clay to 1.4 m, firm fissured grey and brown mottled sandy silty CLAY to 2 m, stiff fissured brown slightly sandy silty CLAY with grey staining in the fissures and small pockets of orange-brown fine sand to 6.2 m, stiff to very stiff fissured grey brown silty CLAY with partings of silty fine sand and some selenite crystals to 20 m. Groundwater was not encountered.
TQ28NE308	SPRING HILL 2	528050	185070	Concrete to 0.77 m, brown Clay to 6.1 m, claystone to 6.25 m, brown clay to 11.59 m, blue clay to 12.04 m. Water observations - nil.
TQ28NE237	GOSPEL OAK LAMBLE ST BH3	528150	185390	Ground level at 43.2m OD. Made Ground (brick, stones and clay) to 1.22 m, brown mottled clay with stones to 2.29 m, brown mottled clay to 5.8 m, brown clay to 7.78 m, blue clay to 9.15 m. Water struck - none.

3 SCREENING

A screening assessment has been undertaken in accordance with the methodology set out in CPG Basements and GHHS (Arup, 2012). The results are presented in Table 3.1.

Table 3.1 Screening assessment

Ref	Question	Response	Evidence
Q1a	Is the site located directly above an aquifer?	No, the site is on the London Clay. No further action	(GHHS Figure 8)
Q1b	Will the proposed basement extend beneath the water table surface?	Unknown. Take forward to scoping stage	No evidence at desk study stage
Q2	Is the site within 100 m of a watercourse, well (used/ disused) or potential spring line?	No, a culvert, possibly the former River Fleet, lies 185 m north east. No further action	(GHHS, Figure 11)
Q3	Is the site within the catchment of the pond chains on Hampstead Heath?	No. No further action	(GHHS, Figure 14)
Q4	Will the proposed basement development result in a change in the proportion of hard surface/paved areas?	No, the current and proposed properties have similar (c.100%) paved/hard surfaced areas. No further action	Site plans, discussion with GPC
Q5	As part of the drainage, will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground (e.g. via soakaways and/or SUDs)	Drainage proposals are currently unknown. Take forward to scoping stage.	No evidence at desk study stage
Q6	Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to or lower than the mean water level in any local pond or spring line?	There are no local ponds, surface water features or spring lines within 250 m of the property. The culvert (possible former River Fleet) 186 m from the site is unlikely to affect the property due to distance. No further action.	(GHHS, Figure 11)

3.1 Non-technical summary of screening process

The screening process identifies the following issues to be carried forward to scoping for further assessment:

- It is not known whether the basement will lie below the water table
- It is not known whether more surface water than at present will be discharged to ground

The other potential concerns considered within the screening process have been demonstrated to be not applicable or not significant when applied to the proposed development.

4 SCOPING

The following issues have been brought forward from the Screening process for further assessment:

The underlying geology comprises London Clay, which is likely to be overlain by Made Ground. It is not known whether groundwater is present below the site at depths which might affect the basement. Groundwater flow within the London Clay is generally negligible, although some groundwater movement occurs on discrete sand partings or other discontinuities. There may be perched water present in Made Ground. A BGS record from a borehole 125 m northeast of the site recorded a groundwater seepage in the Made Ground at 2.8 m (31.2 m OD), and a groundwater level was measured at 1m (33 m OD). Site investigation is required to assess the location of the water table and the likelihood of impacts to the basement or the groundwater regime arising as a result.

It is not known whether more surface water than at present will be discharged to ground. It is considered likely that very little water is discharged to ground under the present site configuration, but drainage plans are not yet known.

5 SITE INVESTIGATION

A site investigation was undertaken in February 2019 by Ground and Water Ltd. Two boreholes and two trial pits were excavated at the site. The ground conditions are shown in Table 5.1.

Table 5.1 Ground conditions

Borehole or trial pit	Geology	Groundwater
WS1	Made ground to 1.8m. Dark brown to dark orange sandy gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse sub-angular to rounded flint with rare brick above 1m. London Clay to 7.1 m. medium brown to brown and dark brown slightly sandy CLAY and clay with sand lenses. Sand is fine to coarse grained. Refusal at depth on possible claystone.	Groundwater was not observed during drilling.
WS2	Made Ground to 1.1m. Orange brown sandy silty gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse sub angular flint. Head deposits to 2.0m. Orange brown grey sandy silty gravelly CLAY. Sand is flint to coarse gained. Gravel is fine to coarse sub-angular to rounded flint. London Clay to 6.45m. Brown grey sandy silty CLAY. Sand is fine to coarse grained. Refusal at depth on possible claystone.	No groundwater encountered.
TP1	Made ground to 1.0 m underlain by Head Deposits comprising brown sandy gravelly CLAY. Sand is fine to coarse grained, gravel is fine to coarse sub-angular to rounded flint.	No groundwater encountered.
TP2	Made ground to 0.95 m underlain by Head Deposits comprising dark brown to brown slightly sandy gravelly CLAY. Sand is fine to coarse grained, gravel is fine to coarse sub-angular to rounded flint.	No groundwater encountered.

6 BASEMENT IMPACT ASSESSMENT - GROUNDWATER

6.1 Conceptual model

The conceptual ground model is of a variable thickness of Made Ground (observed as between 1.1 m and 1.8 m thick) overlying Head Deposits, which are sometimes absent. The Made Ground comprises sandy sometimes silty gravelly clay, and the Head Deposits also comprise sandy gravelly clay. These deposits are underlain by the London Clay, encountered between 1.8 m and 2.0 m bgl, comprising brown and dark brown silty or sandy clay, or clay with sand lenses.

No groundwater was encountered during drilling. Groundwater flow in the London Clay is generally negligible due to the low permeability of the clay, however groundwater is sometimes encountered on more permeable horizons, such as sand layers and fractured claystones. The Made Ground and Head Deposits are also likely to have limited permeability due to their clay content, however some groundwater may be encountered on more permeable horizons, which may also transmit nuisance water to an excavation particularly during wet weather.

6.2 Impact assessment

The proposed development is to demolish the existing single-storey industrial building/warehouse, and construct a five-storey residential building with a basement and roof terrace. The basement would be approximately 3 m deep, and would include sunken terraces at the front and rear. The proportion of hardstanding at the site is not anticipated to change.

There is the potential for perched groundwater to be present in Made Ground below the site, or for groundwater to be present on sand partings or other discontinuities within the London Clay. The site investigation results indicate that groundwater flow in the deposits encountered is likely to be low to negligible. Significant seasonal variations in groundwater elevations are not likely.

There may be some groundwater ingress to the basement excavation, particularly during times of heavy rainfall. On the basis of the available information, it is considered likely that commonly adopted procedures for managing water in an excavation, such as pumping from a sump, will be sufficient to deal with groundwater ingress.

There is the potential for soil moisture and perched groundwater to impact the completed basement structure by inflow seepages or damp.

It is considered unlikely that the basement structure will cause nuisance by backing up of groundwater around the structure. This is due to the lack of observed groundwater during site investigations, the likely low to negligible groundwater flows in the London Clay, and the lack of basements in neighbouring properties.

The current and proposed drainage arrangements for the site are not known. The proportion of hardstanding at the site is not anticipated to change, as the site is fully covered by buildings/hardstanding. It is unlikely that surface water will be discharged to ground under the proposed scheme due to the low permeability of the London Clay underlying the site.

6.3 Mitigation

Provision should be made to keep the basement excavation dry throughout the construction phase.

There are well documented best-practice methods for waterproofing basement structures, to prevent ingress of groundwater to the built structure, and to counter the effects of soil moisture, as outlined in BS 8102:2009 'Code of practice for protection of below ground structures against water from the ground.'

BS 8102 gives guidance on the construction of new basements, introducing three performance grades, as shown in Table 1. BS 8102 also specifies three types of waterproof protection, Types A, B and C; shown in Table 2.

Table 6.1 Level of performance of waterproofing system

Grade	Required level of performance
1	Some seepage and dampness is permitted
2	No water penetration, but dampness is permitted
3	No water penetration or dampness is permitted

Table 6.2 Types of waterproof protection

Type	Waterproof protection
A	Internal or external tanking
B	Structurally integral protection
C	Internal drained cavity protection with a sump and pump for removal of water or its disposal by gravity

The National House Building Council (NHBC) requires basements which are to be used for habitable accommodation to be constructed to Grade 3, and those used for parking cars to be constructed to Grade 2. [7]

NHBC also require that ground investigations should be undertaken to identify the most appropriate waterproofing options, in conjunction with the construction materials to be used[8]. In the absence of adequate ground investigations to establish the ground water regime and drainage characteristics, BS 8102 (Clause 6.1) requires that '*Waterproofing measures should be designed on the basis of water to the full height of the retained ground at some time during the structure's life*'.

The drainage arrangements for the site should be in accordance with the principles of Sustainable Drainage, but should not seek to discharge water to ground.

[7] NHBC Standards 2017
[8] NHBC Standards 2017

7 CONCLUSIONS

In summary, the BIA for groundwater has concluded that the impacts of the basement on the hydrogeological setting are likely to be negligible, due to the lack of observed groundwater during site investigations, the likely low to negligible groundwater flows in the London Clay, and the lack of basements in neighbouring properties. Groundwater has the potential to affect the basement by groundwater flow to the basement excavation during construction and by seepage/soil moisture impact to the finished basement structure. The drainage arrangements for the site are not known. The following mitigation measures are proposed:

- Provision should be made to keep the basement excavation dry during construction
- The basement should be waterproofed in accordance with BS8102
- The drainage arrangements for the site should be in accordance with the principles of Sustainable Drainage, but should not seek to discharge water to ground.

The residual impacts of the basement on the hydrogeological environment, and of groundwater on the completed basement, are considered to be negligible.

8 REFERENCES

Arup, 2012. Geological Hydrogeological and Hydrological Study, Guidance for subterranean development

Ground and Water, 2017. Preliminary summary - ground investigation report. 11 Garrad's Road. Ref GWPR2048.

London Borough of Camden 'Basements'

NHBC Standards

NHBC, 2011. NHBC Technical Extra April 2011 Issue 02

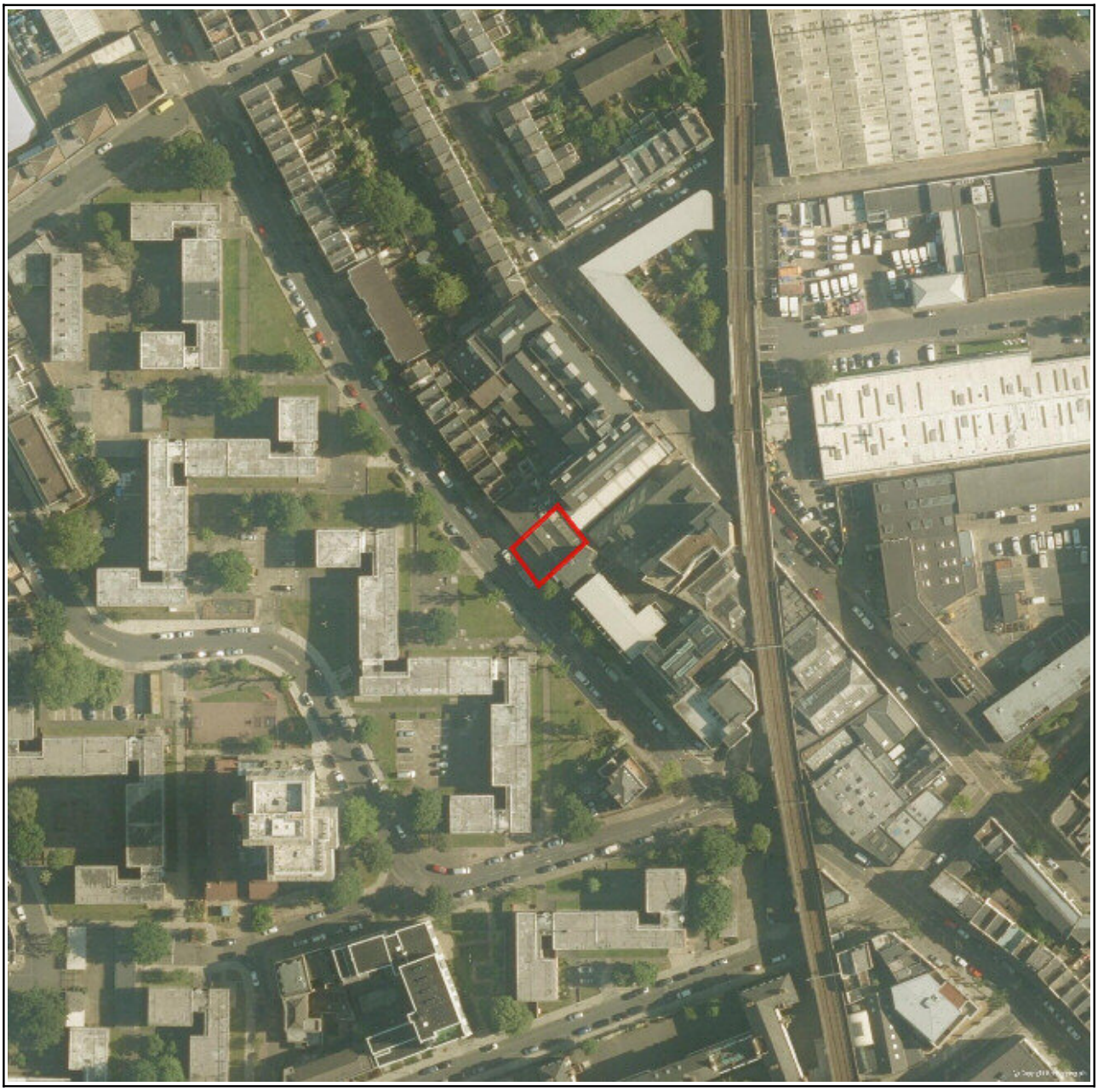
APPENDIX A

Groundsure Report

Enviro Insight

Address:	**128, GRAFTON ROAD, LONDON, NW5 4BA**
Date:	**4 Sep 2017**
Reference:	**GS-4228183**
Client:	**Ground and Project Consultants Ltd**

NW N NE



W E

SW S SE

Aerial Photograph Capture date:	07-Jun-2015
Grid Reference:	528488,185034
Site Size:	0.03ha

Report Reference: GS-4228183
Client Reference: 40213_Grafton

Contents Page

Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	4	1	49	105
1.2 Additional Information – Historical Tank Database	0	0	15	43
1.3 Additional Information – Historical Energy Features Database	0	0	39	31
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	33	19
1.6 Potentially Infilled Land	0	0	1	37

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	1	3	8
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	1	1
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	2	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	3	0	2

Section 4: Current Land Use

	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	1	3	25	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	1
4.3 National Grid Underground Electricity Cables	0	0	0	20
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology

5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	None
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology

	0-500m
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	No
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	5	0	10
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	4
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	2	0	3
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	0	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	No	No	Yes
6.10 Detailed River Network entries within 500m of the site	0	0	1	0	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Are there any Enviroment Agency Zone 2 floodplains within 250m of the study site?	No
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	No
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	No
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Not Prone
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Not Applicable

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	1	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 What is the maximum risk of natural ground subsidence?	Moderate
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Moderate
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Negligible
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	No
10.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

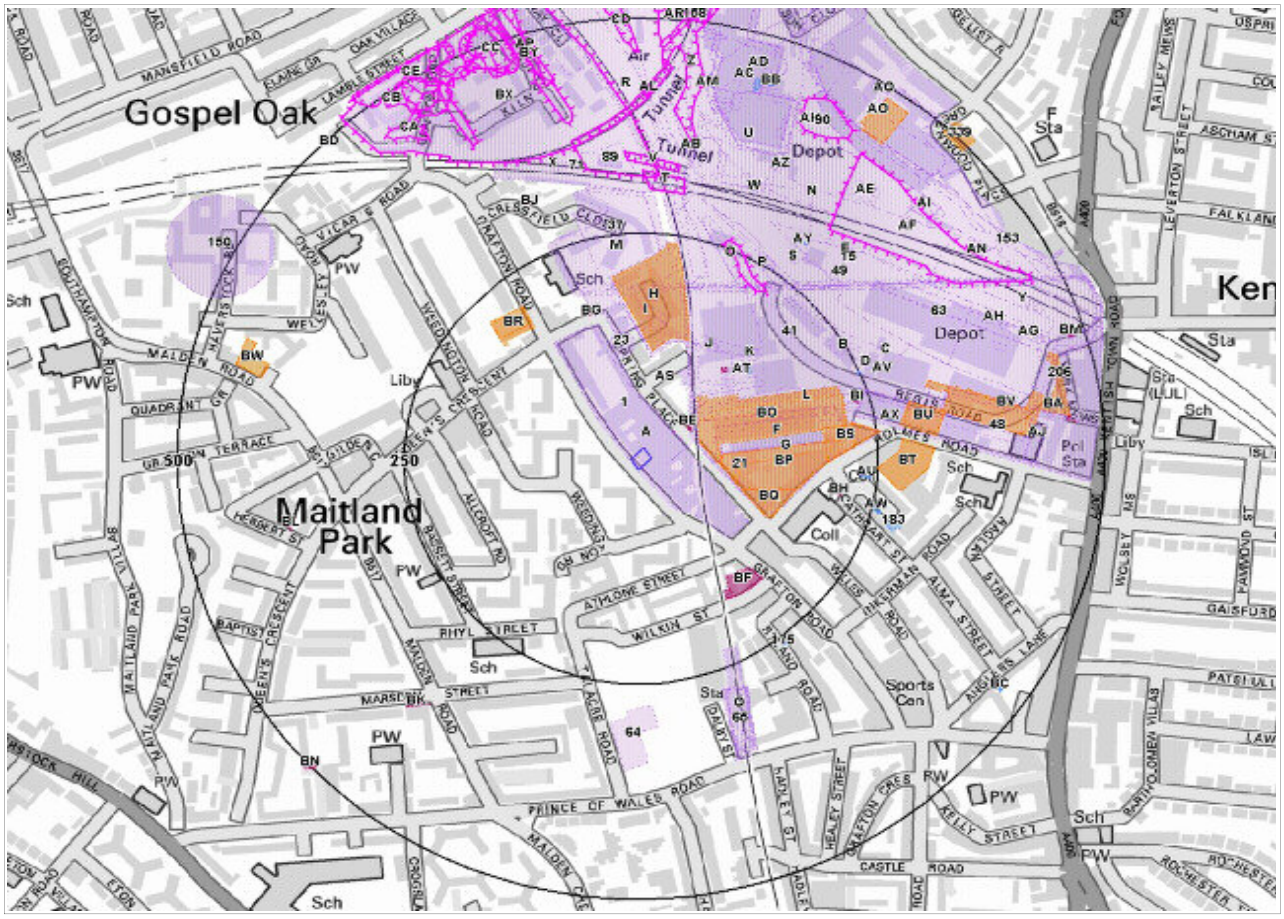
All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use

NW N NE

W E

SW S SE



Site Outline

250 500 Search Buffers (m)

Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 159

ID	Distance [m]	Direction	Use	Date
1	0	On Site	Colour Works	1949
2A	0	On Site	Unspecified Works	1938
3A	0	On Site	Unspecified Works	1920
4A	0	On Site	Unspecified Works	1920
5AV	50	NE	Unspecified Works	1894
6D	54	E	Railway Sidings	1882
7C	55	E	Railway Land	1911
8B	59	NE	Railway Sidings	1920
9B	59	NE	Railway Sidings	1938
10C	62	NE	Railway Sidings	1894
11D	63	NE	Railway Sidings	1911
12E	67	NE	Railway Sidings	1965
13E	67	NE	Railway Sidings	1958
14F	71	E	Railway Building	1882
15	74	NE	Railway Sidings	1949
16F	74	E	Unspecified Depot	1965
17F	74	E	Coal Depot	1938
18F	74	E	Coal Depot	1920
19G	76	E	Unspecified Depot	1974
20G	78	E	Coal Depot	1949
21	93	E	Unspecified Depot	1965
22I	110	N	Unspecified Works	1911
23	110	N	Road Works	1920
24H	115	N	Unspecified Works	1965
25H	115	N	Unspecified Commercial/Industrial	1958
26I	115	N	Road Vehicle Works	1938
27I	115	N	Road Vehicle Works	1920
28J	130	NE	Railway Building	1938
29J	130	NE	Railway Building	1920
30K	148	NE	Railway Building	1938
31K	148	NE	Railway Building	1920
32L	151	E	Railway Buildings	1920
33L	151	E	Railway Buildings	1938

34M	180	N	Timber Yard	1920
35M	185	N	Timber Yard	1938
36N	188	N	Railway Sidings	1920
37	189	N	Unspecified Depot	1965
38AZ	190	N	Railway Sidings	1938
39N	191	N	Railway Sidings	1894
40N	191	N	Unspecified Commercial/Industrial	1894
41	204	NE	Railway Building	1920
42O	214	NE	Railway Sidings	1879
43O	214	NE	Railway Sidings	1869
44O	221	NE	Unspecified Ground Workings	1920
45Q	229	SE	Railway Station	1911
46B	232	NE	Railway Building	1938
47B	232	NE	Railway Building	1920
48	233	E	Unspecified Commercial/Industrial	1949
49	238	NE	Railway Sidings	1974
50R	241	N	Railway Sidings	1894
51P	244	NE	Railway Building	1920
52P	247	NE	Railway Buildings	1949
53N	249	NE	Railway Sidings	1869
54N	249	NE	Railway Sidings	1879
55P	252	NE	Railway Building	1938
56Q	271	S	Railway Station	1920
57Q	271	S	Railway Station	1938
58S	272	NE	Railway Building	1920
59Q	273	S	Railway Station	1973
60Q	273	S	Railway Station	1968
61Q	273	S	Railway Station	1989
62Q	273	S	Railway Station	1957
63	274	NE	Unspecified Depot	1974
64	274	S	Unspecified Works	1973
65	275	S	Railway Station	1948
66Q	275	S	Railway Station	1894
67R	275	N	Railway Sidings	1920
68Q	277	SE	Railway Station	1882
69S	277	NE	Railway Building	1938
70S	282	NE	Railway Building	1949
71	297	N	Railway Sidings	1938
72T	299	N	Tunnel	1965
73T	299	N	Tunnel	1974
74T	299	N	Tunnel	1996
75T	299	N	Tunnel	1958
76BX	316	N	Brick Works	1894
77T	316	N	Railway Building	1938

78R	317	N	Railway Sidings	1949
79R	317	N	Railway Sidings	1958
80U	321	N	Unspecified Sheds	1879
81U	321	N	Unspecified Sheds	1869
82U	321	N	Railway Building	1894
83W	322	N	Railway Building	1920
84V	324	N	Tunnel	1965
85V	324	N	Tunnel	1996
86V	324	N	Tunnel	1974
87V	324	N	Tunnel	1958
88AF	326	NE	Cuttings	1869
89	328	N	Railway Building	1996
90	330	NE	Unspecified Depot	1974
91W	334	N	Railway Building	1949
92X	338	N	Railway Building	1920
93X	339	N	Railway Building	1938
94Y	339	NE	Railway Sidings	1920
95Y	346	NE	Railway Sidings	1911
96AB	349	N	Railway Building	1920
97AK	351	NE	Unspecified Depot	1996
98Z	356	N	Unspecified Ground Workings	1869
99Z	356	N	Unspecified Ground Workings	1879
100AA	359	N	Tunnel	1996
101AA	359	N	Tunnel	1958
102AA	359	N	Tunnel	1965
103AA	359	N	Tunnel	1974
104AB	360	N	Railway Building	1949
105Y	361	NE	Railway Sidings	1938
106AC	364	N	Locomotive Sheds	1920
107AC	367	N	Locomotive Sheds	1938
108AE	372	NE	Railway Building	1894
109AD	373	N	Unspecified Commercial/Industrial	1965
110AD	373	N	Locomotive Sheds	1949
111AD	373	N	Unspecified Commercial/Industrial	1958
112AE	373	NE	Railway Building	1879
113AE	373	NE	Railway Building	1869
114BY	387	N	Unspecified Ground Workings	1949
115AG	395	NE	Railway Buildings	1949
116AF	396	NE	Railway Building	1920
117AG	397	E	Railway Building	1882
118AH	399	NE	Railway Building	1965
119AH	399	NE	Railway Building	1958

120BZ	400	NW	Unspecified Ground Workings	1920
121AI	404	NE	Railway Building	1949
122AI	405	NE	Railway Building	1965
123AI	405	NE	Railway Building	1958
124AI	406	NE	Railway Building	1938
125AJ	410	E	Police Station	1965
126AJ	410	E	Police Station	1996
127AJ	410	E	Police Station	1974
128AK	410	NE	Unspecified Heap	1894
129AL	411	N	Unspecified Shaft	1965
130AL	414	N	Unspecified Shaft	1996
131AL	414	N	Unspecified Shaft	1974
132AM	424	N	Railway Building	1869
133AM	424	N	Railway Building	1879
134AN	425	NE	Railway Building	1920
135AN	432	NE	Railway Building	1949
136CA	432	NW	Unspecified Ground Workings	1920
137AO	432	NE	Bottling Stores	1920
138AP	435	N	Unspecified Ground Workings	1894
139AN	435	NE	Railway Building	1938
140AO	440	NE	Unspecified Stores	1938
141AP	441	N	Unspecified Depot	1965
142AQ	442	NE	Unspecified Commercial/Industrial	1965
143AQ	442	NE	Bottling Stores	1949
144AQ	442	NE	Unspecified Commercial/Industrial	1958
145AG	444	E	Railway Building	1965
146AG	444	E	Railway Building	1958
147Y	448	NE	Railway Building	1920
148Y	450	NE	Railway Building	1949
149AN	451	NE	Railway Building	1920
150	457	NW	Unspecified Station	1938
151AN	459	NE	Railway Building	1949
152CC	460	N	Unspecified Pit	1938
153	460	NE	Railway Building	1938
154CE	469	NW	Unspecified Ground Workings	1938
155AR	473	N	Unspecified Pit	1869
156AR	473	N	Unspecified Pit	1879
157CB	482	NW	Unspecified Pit	1938
158	484	N	Railway Sidings	1920
159AR	498	N	Cuttings	1894

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 58

ID	Distance (m)	Direction	Use	Date
160AS	82	N	Unspecified Tank	1995
161AS	82	N	Unspecified Tank	1992
162AS	83	N	Unspecified Tank	1977
163AS	83	N	Unspecified Tank	1990
164AS	83	N	Unspecified Tank	1985
165AS	83	N	Unspecified Tank	1990
166AS	83	N	Unspecified Tank	1991
167AT	137	NE	Tanks	1896
168AT	144	NE	Tanks	1896
169AU	232	E	Tanks	1968
170AU	233	E	Tanks	1967
171AV	247	NE	Tanks	1977
172AW	248	E	Unspecified Tank	1968
173AW	248	E	Unspecified Tank	1966
174AW	249	E	Unspecified Tank	1980
175	256	SE	Unspecified Tank	1875
176AX	264	E	Unspecified Tank	1990
177AX	264	E	Unspecified Tank	1990
178AX	264	E	Unspecified Tank	1985
179AX	264	E	Unspecified Tank	1991
180AX	265	E	Unspecified Tank	1977
181AX	265	E	Unspecified Tank	1995
182AX	265	E	Unspecified Tank	1992
183	268	E	Unspecified Tank	1996
184AW	272	E	Unspecified Tank	1970
185AW	272	E	Unspecified Tank	1968
186AW	272	E	Unspecified Tank	1966
187AW	273	E	Unspecified Tank	1987
188AW	273	E	Unspecified Tank	1991
189AW	273	E	Unspecified Tank	1980
190AY	294	NE	Unspecified Tank	1990
191AY	294	NE	Unspecified Tank	1991
192AY	294	NE	Unspecified Tank	1990
193AY	294	NE	Unspecified Tank	1985
194AY	294	NE	Unspecified Tank	1995
195AY	294	NE	Unspecified Tank	1992
196AZ	433	N	Tanks	1896

197BA	441	E	Unspecified Tank	1991
198BA	441	E	Unspecified Tank	1985
199BA	441	E	Unspecified Tank	1990
200BA	441	E	Unspecified Tank	1990
201BA	442	E	Unspecified Tank	1992
202BA	442	E	Unspecified Tank	1995
203BB	444	N	Unspecified Tank	1936
204BB	445	N	Unspecified Tank	1952
205BB	445	N	Unspecified Tank	1952
206	460	E	Unspecified Tank	1977
207BC	465	SE	Unspecified Tank	1916
208BC	468	SE	Unspecified Tank	1970
209BC	468	SE	Unspecified Tank	1952
210BC	468	SE	Unspecified Tank	1968
211BC	468	SE	Unspecified Tank	1952
212BC	468	SE	Unspecified Tank	1980
213BC	468	SE	Unspecified Tank	1966
214BC	468	SE	Unspecified Tank	1952
215BD	494	NW	Unspecified Tank	1952
216BD	494	NW	Unspecified Tank	1952
217BD	494	NW	Unspecified Tank	1952

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 70

ID	Distance (m)	Direction	Use	Date
218BE	51	NE	Electricity Substation	1977
219BE	52	NE	Electricity Substation	1968
220BE	52	NE	Electricity Substation	1990
221BE	52	NE	Electricity Substation	1985
222BE	52	NE	Electricity Substation	1990
223BE	52	NE	Electricity Substation	1991
224BE	52	NE	Electricity Substation	1995
225BE	52	NE	Electricity Substation	1992
226BE	53	NE	Electricity Substation	1967
227AT	123	NE	Electricity Substation	1991
228AT	123	NE	Electricity Substation	1990
229AT	123	NE	Electricity Substation	1990
230AT	123	NE	Electricity Substation	1995
231AT	123	NE	Electricity Substation	1992

232BF	158	SE	Electricity Substation	1952
233BF	158	SE	Electricity Substation	1952
234BG	166	N	Electricity Substation	1974
235BG	166	N	Electricity Substation	1979
236BG	166	N	Electricity Substation	1991
237BG	166	N	Electricity Substation	1982
238BG	166	N	Electricity Substation	1982
239BG	166	N	Electricity Substation	1991
240BG	166	N	Electricity Substation	1952
241BG	166	N	Electricity Substation	1952
242BG	166	N	Electricity Substation	1952
243BF	169	SE	Electricity Substation	1996
244BF	169	SE	Electricity Substation	1999
245BF	173	SE	Electricity Substation	1991
246BF	173	SE	Electricity Substation	1987
247BH	208	E	Electricity Substation	1987
248BH	208	E	Electricity Substation	1991
249BH	209	E	Electricity Substation	1996
250BH	209	E	Electricity Substation	1999
251BI	232	E	Electricity Substation	1990
252BI	232	E	Electricity Substation	1991
253BI	232	E	Electricity Substation	1985
254BI	232	E	Electricity Substation	1990
255BI	233	E	Electricity Substation	1995
256BI	233	E	Electricity Substation	1992
257BJ	310	NW	Electricity Substation	1991
258BJ	310	NW	Electricity Substation	1991
259BJ	310	NW	Electricity Substation	1982
260BJ	310	NW	Electricity Substation	1982
261BJ	310	NW	Electricity Substation	1974
262BJ	310	NW	Electricity Substation	1979
263BK	357	SW	Electricity Substation	1975
264BK	369	SW	Electricity Substation	1982
265BK	369	SW	Electricity Substation	1991
266BL	381	W	Electricity Substation	1982
267BL	381	W	Electricity Substation	1991
268BL	383	W	Electricity Substation	1975
269BA	460	E	Electricity Substation	1985
270BA	460	E	Electricity Substation	1990
271BA	460	E	Electricity Substation	1991
272BA	460	E	Electricity Substation	1990
273BA	461	E	Electricity Substation	1977
274BA	466	E	Electricity Substation	1992
275BA	466	E	Electricity Substation	1995
276BM	480	E	Electricity Substation	1985
277BM	480	E	Electricity Substation	1990

278BM	480	E	Electricity Substation	1991
279BM	480	E	Electricity Substation	1990
280BM	480	E	Electricity Substation	1995
281BM	480	E	Electricity Substation	1992
282BM	480	E	Electricity Substation	1968
283BM	481	E	Electricity Substation	1977
284BM	481	E	Electricity Substation	1967
285BN	493	SW	Electricity Substation	1952
286BN	493	SW	Electricity Substation	1952
287BN	493	SW	Electricity Substation	1952

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 52

ID	Distance (m)	Direction	Use	Date
288BO	56	E	Garage	1990
289BO	56	E	Garage	1991
290BO	56	E	Garage	1990
291F	57	E	Garage	1995
292F	57	E	Garage	1992
293BP	72	E	Road Services Depot	1952
294G	76	E	Road Services Depot	1968
295BP	76	E	Road Services Depot	1967
296BP	91	E	Road Services Depot	1952
297BQ	105	E	Road Services Depot	1952
298BQ	105	E	Road Services Depot	1966
299BQ	105	E	Road Services Depot	1952
300BQ	105	E	Road Services Depot	1968
301BQ	105	E	Road Services Depot	1952
302BQ	105	E	Road Services Depot	1970
303H	114	N	Engineering Workshops	1952

304H	114	N	Engineering Workshops	1968
305H	114	N	Engineering Workshops	1952
306H	120	N	Engineering Workshops	1952
307H	120	N	Engineering Workshops	1952
308BR	185	NW	Garage	1979
309BR	191	NW	Garage	1974
310BS	191	E	Garage	1995
311BS	191	E	Garage	1992
312BR	191	NW	Garage	1991
313BR	191	NW	Garage	1991
314BR	191	NW	Garage	1982
315BS	197	E	Garage	1985
316BS	222	E	Garage	1991
317BS	222	E	Garage	1990
318BS	222	E	Garage	1990
319BT	249	E	Taxicab Service Depot	1952
320BT	249	E	Taxicab Service Depot	1952
321BU	276	E	Garage	1990
322BU	276	E	Garage	1990
323BU	276	E	Garage	1991
324BU	276	E	Garage	1985
325BU	280	E	Garage	1995
326BU	280	E	Garage	1992
327BV	312	E	Carriage Shed	1952
328BV	313	E	Carriage Shed	1952
329BW	414	W	Garage	1991
330BW	414	W	Garage	1991
331BW	414	W	Garage	1982
332BW	414	W	Garage	1982
333BW	414	W	Garage	1967
334BW	414	W	Garage	1979
335BW	414	W	Garage	1974
336BW	414	W	Garage	1966
337AO	440	NE	Garage	1952
338AO	441	NE	Garage	1952
339	493	NE	Coach Building Works	1952

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 38

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
340O	221	NE	Unspecified Ground Workings	1920

341T	299	N	Tunnel	1958
342T	299	N	Tunnel	1996
343T	299	N	Tunnel	1974
344T	299	N	Tunnel	1965
345BX	316	N	Brick Works	1894
346V	324	N	Tunnel	1965
347V	324	N	Tunnel	1996
348V	324	N	Tunnel	1958
349V	324	N	Tunnel	1974
350AF	326	NE	Cuttings	1869
351Z	356	N	Unspecified Ground Workings	1869
352Z	356	N	Unspecified Ground Workings	1879
353AA	359	N	Tunnel	1958
354AA	359	N	Tunnel	1996
355AA	359	N	Tunnel	1974
356AA	359	N	Tunnel	1965
357BY	387	N	Unspecified Ground Workings	1949
358BZ	400	NW	Unspecified Ground Workings	1920
359AK	410	NE	Unspecified Heap	1894
360AL	411	N	Unspecified Shaft	1965
361AL	414	N	Unspecified Shaft	1974
362AL	414	N	Unspecified Shaft	1996
363CA	432	NW	Unspecified Ground Workings	1920
364AP	435	N	Unspecified Ground Workings	1894
365BZ	449	NW	Pond	1938
366CB	459	NW	Pond	1920
367CC	460	N	Pond	1920
368CC	460	N	Unspecified Pit	1938
369CC	460	N	Pond	1938
370CD	461	N	Water Body	1879
371CD	461	N	Water Body	1869
372CC	468	N	Pond	1949
373CE	469	NW	Unspecified Ground Workings	1938
374AR	473	N	Unspecified Pit	1869
375AR	473	N	Unspecified Pit	1879
376CB	482	NW	Unspecified Pit	1938
377AR	498	N	Cuttings	1894

2. Environmental Permits, Incidents and Registers Map

NW N NE

W E

SW S SE

- Site Outline
- Search Buffers (m) — 250 — 500
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

12

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
3	26	SE	528500 185000	Address: Jt Coachwks, Spring Pl, Kentish Town, NW5 3BH Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
4	86	SE	528574 184989	Address: Solus London Ltd, 3-6 Spring Place, NW5 4BA Process: Unknown Status: Historical Permit Permit Type: Part B	Enforcement: Enforcement Notified Date of Enforcement: 26/05/2007 Comment: Not given
5	135	E	528632 185071	Address: Hexagon of Highgate, 1 Browns Lane, Regis Road, Kentish Town, London, NW5 3EX Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
6	191	S	528435 184840	Address: L G Coachworks, 65 Wilkin Street Mews, Kentish Town, London, NW5 3NN Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
7	269	SE	528610 184784	Address: D P Enamellers, Imperial Works, Perren Street, London NW5 3ED Process: Metal Coating Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
8A	269	W	528212 185010	Address: Moderna Dry Cleaners, 70 Queens Crescent, NW5 4EE Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
9A	269	W	528212 185010	Address: Moderna Dry Cleaners, 70 Queens Crescent, NW5 4EE Process: Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
10	342	S	528600 184700	Address: Jt Coachwks, Prince Of Wales Rd, London, NW5 3LR Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
11B	353	NE	528819 185191	Address: Post Office Vehicle Serivices, Unit A Kentish Town Business Park, Regis Road, London, NW5 3RR Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
12B	353	NE	528819 185191	Address: Post Office Vehicle Serivices, Unit A Kentish Town Business Park, Regis Road, London, NW5 3RR Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

ID	Distance (m)	Direction	NGR	Details	
13C	435	SE	528776 184698	Address: Prince of Wales Dry Cleaners, 17 Prince of Wales Road, NW5 3LH Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
14C	435	SE	528776 184698	Address: Prince of Wales Dry Cleaners, 17 Prince of Wales Road, NW5 3LH Process: Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

0

Database searched and no data found.

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

2

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	243	S	528530 184784	Incident Date: 13-Dec-2001 Incident Identification: 48132 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
2	424	S	528329 184630	Incident Date: 30-May-2002 Incident Identification: 82130 Pollutant: Organic Chemicals/Products Pollutant Description: Other Organic Chemical or Product	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

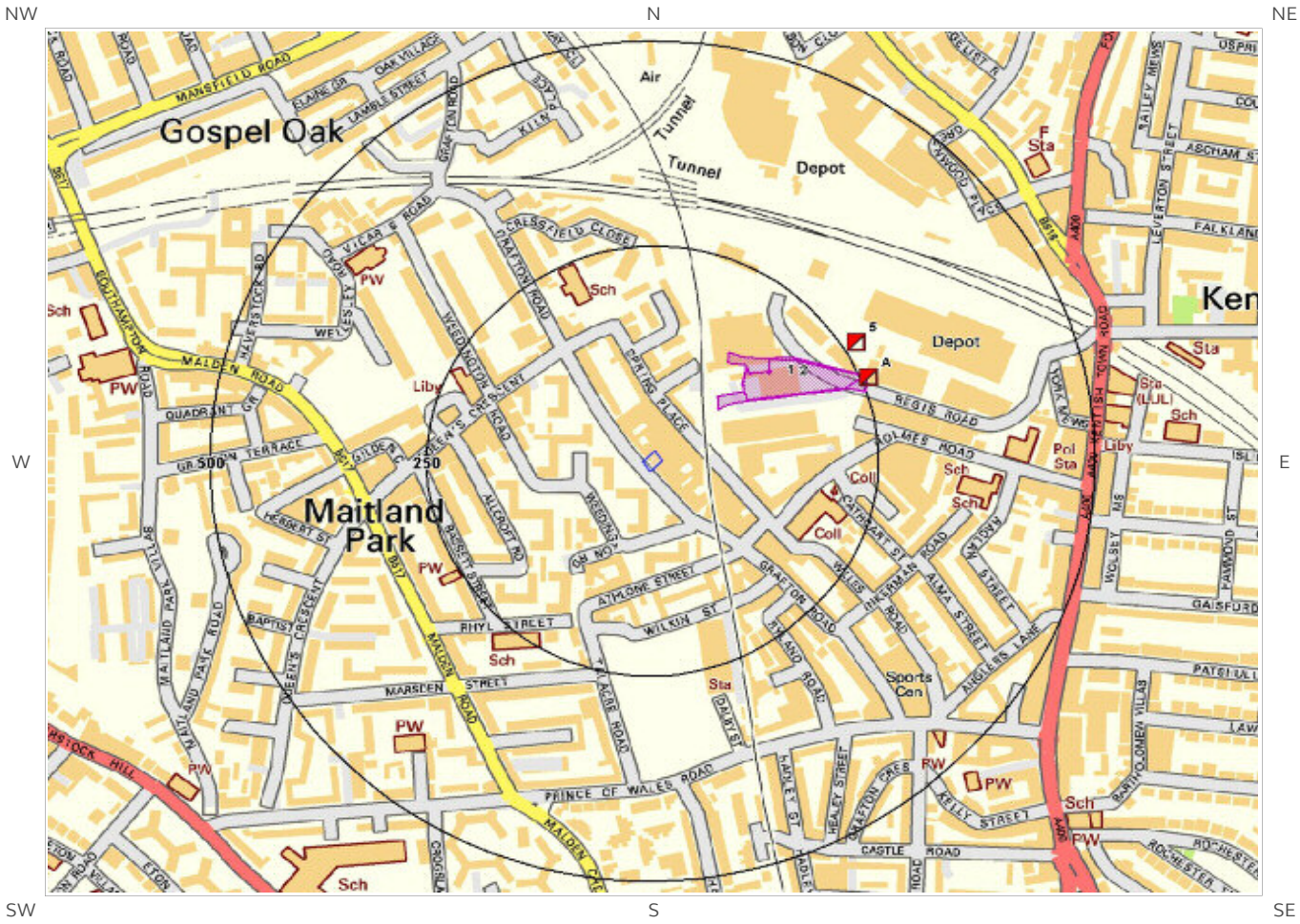
Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site? 0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



Site Outline

250 — 500 — Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

2

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details		
1	89	NE	528649 185132	Type of Site: Scrap Metal Depot Site Address: N/A	Planning Application Reference: N/A Date: 1967	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
2	124	NE	528662 185137	Type of Site: Scrap Metal Depot Site Address: N/A	Planning Application Reference: N/A Date: 1967	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

5

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
3A	259	NE	528740 185138	Site Address: Camden London Borough Council, Recycling Centre, Regis Road, Kentish Town, London, NW5 3EP Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAM001 EPR reference: EA/EPR/DP3091NK/V003 Operator: Camden London Borough Council Waste Management licence No: 80349 Annual Tonnage: 7793.0	Issue Date: 10/12/1996 Effective Date: - Modified: 25/01/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Regis Road Recycling Centre Correspondence Address: -
4A	259	NE	528740 185138	Site Address: Camden London Borough Council, Recycling Centre, Regis Road, Kentish Town, London, NW5 3EP Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LWL001 EPR reference: EA/EPR/GB3230DW/T001 Operator: Londonwaste Limited Waste Management licence No: 80349 Annual Tonnage: 7793.0	Issue Date: 10/12/1996 Effective Date: 11/05/2012 Modified: 25/01/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Regis Road Recycling Centre Correspondence Address: -

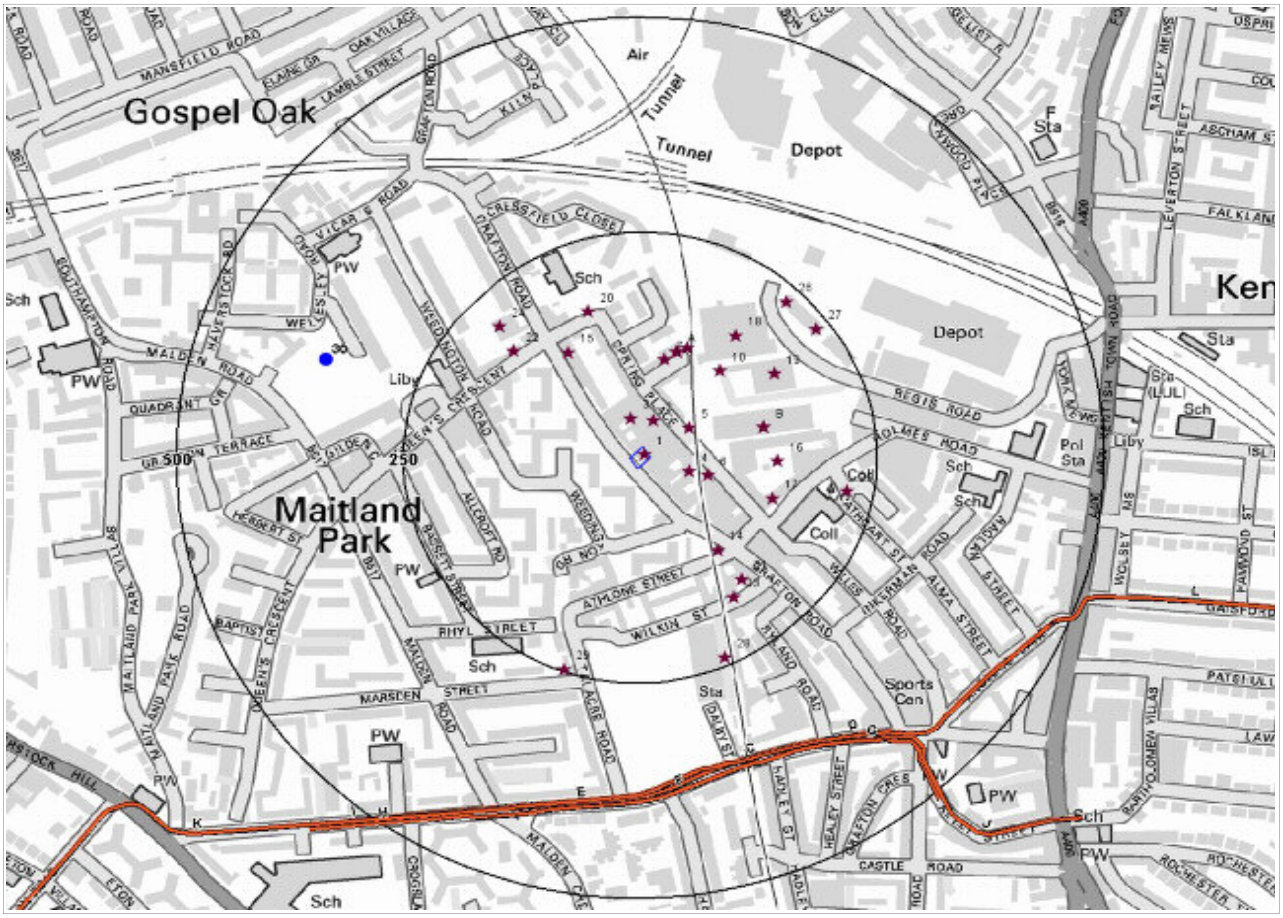
ID	Distance (m)	Direction	NGR	Details	
5	267	NE	528726 185181	Site Address: Camden London Borough Council, Recycling Centre, Regis Road, Kentish Town, London, NW5 3EP Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LWL001 EPR reference: EA/EPR/GB3230DW/T001 Operator: LondonWaste Ltd Waste Management licence No: 80349 Annual Tonnage: 7793.0	Issue Date: 10/12/1996 Effective Date: 11/05/2012 Modified: 25/01/2002 Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Transferred Site Name: Regis Road Recycling Centre Correspondence Address: -
Not shown	1004	S	528667 184035	Site Address: - Type: Household Waste Amenity Site Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: CAM003 EPR reference: - Operator: Camden London Borough Council Waste Management licence No: 80482 Annual Tonnage: 0.0	Issue Date: 15/10/1994 Effective Date: - Modified: - Surrendered Date: 25/07/1997 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Jamestown Road Ca Site Correspondence Address: Camden LB Council, Town Hall Extension, Argyle Street, London, WC1H 8EQ
Not shown	1004	S	528667 184035	Site Address: - Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAM003 EPR reference: EA/EPR/UP3697NB/S002 Operator: Camden London Borough Council Waste Management licence No: 80482 Annual Tonnage: 20000.0	Issue Date: 15/10/1994 Effective Date: - Modified: - Surrendered Date: 1.99707e+016 Expiry Date: 0 Cancelled Date: 0 Status: Surrendered Site Name: Jamestown Road CA Site Correspondence Address: -

4. Current Land Use Map

NW N NE

W E

SW S SE



Site Outline

Search Buffers (m)
250
500

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 29

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	E & D Scaffold Co Ltd	528495 185040	128-130, Grafton Road, London, NW5 4BA	Construction and Tool Hire	Hire Services
2	34	N	Aktiva	528504 185079	Spring House 10, Spring Place, London, NW5 3BH	Lampshades and Lighting	Consumer Products
3	37	N	Chimney	528480 185082	NW5	Chimneys	Industrial Features
4	45	E	Works	528544 185020	NW5	Unspecified Works Or Factories	Industrial Features
5	54	NE	Electricity Sub Station	528544 185071	NW5	Electrical Features	Infrastructure and Facilities
6	66	E	Works	528565 185016	NW5	Unspecified Works Or Factories	Industrial Features
7	106	N	The Car Surgery Ltd	528517 185150	2, Arctic Street, London, NW5 4DJ	Vehicle Repair, Testing and Servicing	Repair and Servicing
8A	117	N	The End Garage	528530 185158	5, Arctic Street, London, NW5 4DJ	Vehicle Repair, Testing and Servicing	Repair and Servicing
9A	118	N	Arctic Motors	528531 185159	1, 5, Arctic Street, Belsize Park, London, NW5 4DJ	Vehicle Repair, Testing and Servicing	Repair and Servicing
10	123	NE	Electricity Sub Station	528578 185137	NW5	Electrical Features	Infrastructure and Facilities
11A	126	N	The Car Surgery	528541 185164	Arctic Garages, Arctic Street, London, NW5 4DJ	Vehicle Repair, Testing and Servicing	Repair and Servicing
12B	129	E	Spire Automotive	528626 185071	1, Browns Lane, London, NW5 3EX	New Vehicles	Motoring
13B	129	E	Spire BMW	528626 185071	1, Browns Lane, Kentish Town, London, NW5 3EX	Vehicle Repair, Testing and Servicing	Repair and Servicing
14	129	SE	Christo Print & Design Ltd	528576 184929	61, Grafton Road, London, NW5 3EN	Published Goods	Industrial Products
15	138	NW	Congo Music	528410 185158	178, Grafton Road, London, NW5 4BA	Recording Studios and Record Companies	IT, Advertising, Marketing and Media Services
16	140	E	Council Depot	528642 185032	NW5	Container and Storage	Transport, Storage and Delivery
17	142	E	Council Depot	528636 184989	NW5	Container and Storage	Transport, Storage and Delivery
18	166	NE	Warehouse	528596 185178	NW5	Container and Storage	Transport, Storage and Delivery
19	167	NE	Warehouse	528638 185134	NW5	Container and Storage	Transport, Storage and Delivery

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
20	170	N	Electricity Sub Station	528433 185206	NW5	Electrical Features	Infrastructure and Facilities
21	172	SE	Works	528602 184895	NW5	Unspecified Works Or Factories	Industrial Features
22	180	NW	5a Studio	528351 185160	193-199, Queens Crescent, London, NW5 4DS	Recording Studios and Record Companies	IT, Advertising, Marketing and Media Services
23	183	SE	Electricity Sub Station	528594 184874	NW5	Electrical Features	Infrastructure and Facilities
24	211	NW	West Hampstead Motors Ltd	528335 185188	155-161, Grafton Road, London, NW5 4AY	Vehicle Repair, Testing and Servicing	Repair and Servicing
25	220	E	Electricity Sub Station	528718 184997	NW5	Electrical Features	Infrastructure and Facilities
26	232	NE	E K O	528651 185217	Unit 1-3 Kentish Town Industrial Estate, Regis Road, London, NW5 3EW	Office and Shop Equipment	Industrial Products
27	236	NE	City Scaffolding	528684 185186	Kentish Town Industrial Estate, Regis Road, London, NW5 3EW	Construction and Tool Hire	Hire Services
28	239	SE	Camden Town Brewery	528584 184804	Units 55-59, Wilkin Street Mews, London, NW5 3NN	Alcoholic Drinks	Foodstuffs
29	247	S	Gay to Z Directories Ltd	528407 184790	35, Talacre Road, London, NW5 3PJ	Published Goods	Industrial Products

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 1

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
30	355	W	528143 185150	Obsolete	Court Service Station, 160A, Malden Road, Malden Road, Kentish Town, London, Inner London, NW5 4BT	Not Applicable	Obsolete

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 20

The following Underground Electricity Transmission Cable records are represented as linear features on the Current Land Use map:

ID	Distance (m)	Direction	Details	
31C	356	S	Cable Set: CABLE SECT T2 Cable Route: ST JOHNS WOOD - TOTTENHAM 1 Cable Make: BICC 275KV (OIL) CABLE S/CORE AL SHEATH	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 2001 Cable in tunnel: Y
32C	356	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
33D	358	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): 275 Year of installation: - Cable in tunnel: -
34D	358	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
35E	359	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): 275 Year of installation: - Cable in tunnel: -
36E	359	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
37F	365	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
38F	366	S	Cable Set: CABLE SECT 52 Cable Route: ST JOHNS WOOD - TOTTENHAM 2 Cable Make: BICC 275KV OIL FILLED PB SHEATH CABLE	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1965 Cable in tunnel: -
39G	367	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
40G	368	S	Cable Set: CABLE SECT 51 Cable Route: ST JOHNS WOOD - TOTTENHAM 2 Cable Make: BICC 275KV OIL FILLED PB SHEATH CABLE	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1965 Cable in tunnel: -
41H	411	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -

ID	Distance (m)	Direction	Details	
42H	411	S	Cable Set: CABLE SECT 53 Cable Route: ST JOHNS WOOD - TOTTENHAM 2 Cable Make: BICC 275KV OIL FILLED PB SHEATH CABLE	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1965 Cable in tunnel: -
43I	417	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): 275 Year of installation: - Cable in tunnel: -
44I	417	S	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
45J	455	SE	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
46J	455	SE	Cable Set: - Cable Route: - Cable Make: -	Cable Type: DECOMMISSIONED Operating Voltage (kV): 275 Year of installation: - Cable in tunnel: -
47K	470	SW	Cable Set: CABLE SECT T3 Cable Route: ST JOHNS WOOD - TOTTENHAM 1 Cable Make: BICC 275KV (OIL) CABLE S/CORE AL SHEATH	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 2001 Cable in tunnel: Y
48K	470	SW	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
49L	475	SE	Cable Set: CABLE SECT T1 Cable Route: ST JOHNS WOOD - TOTTENHAM 1 Cable Make: BICC 275KV (OIL) CABLE S/CORE AL SHEATH	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 2001 Cable in tunnel: Y
50L	476	SE	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.3 Bedrock and Solid Geology

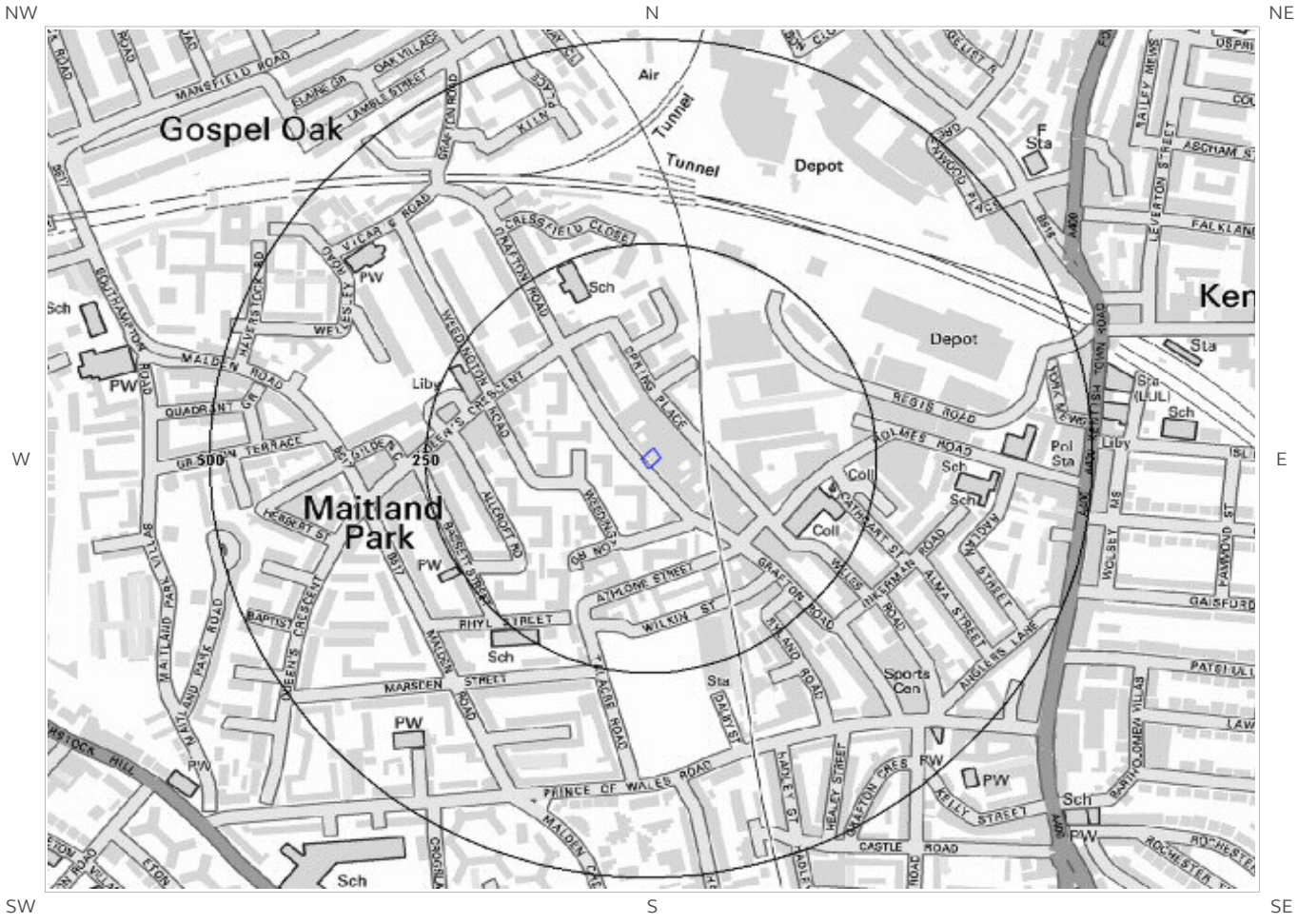
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
LC-XCZS	LONDON CLAY FORMATION	CLAY, SILT AND SAND

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



Site Outline

250 — 500 — Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licenses

Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

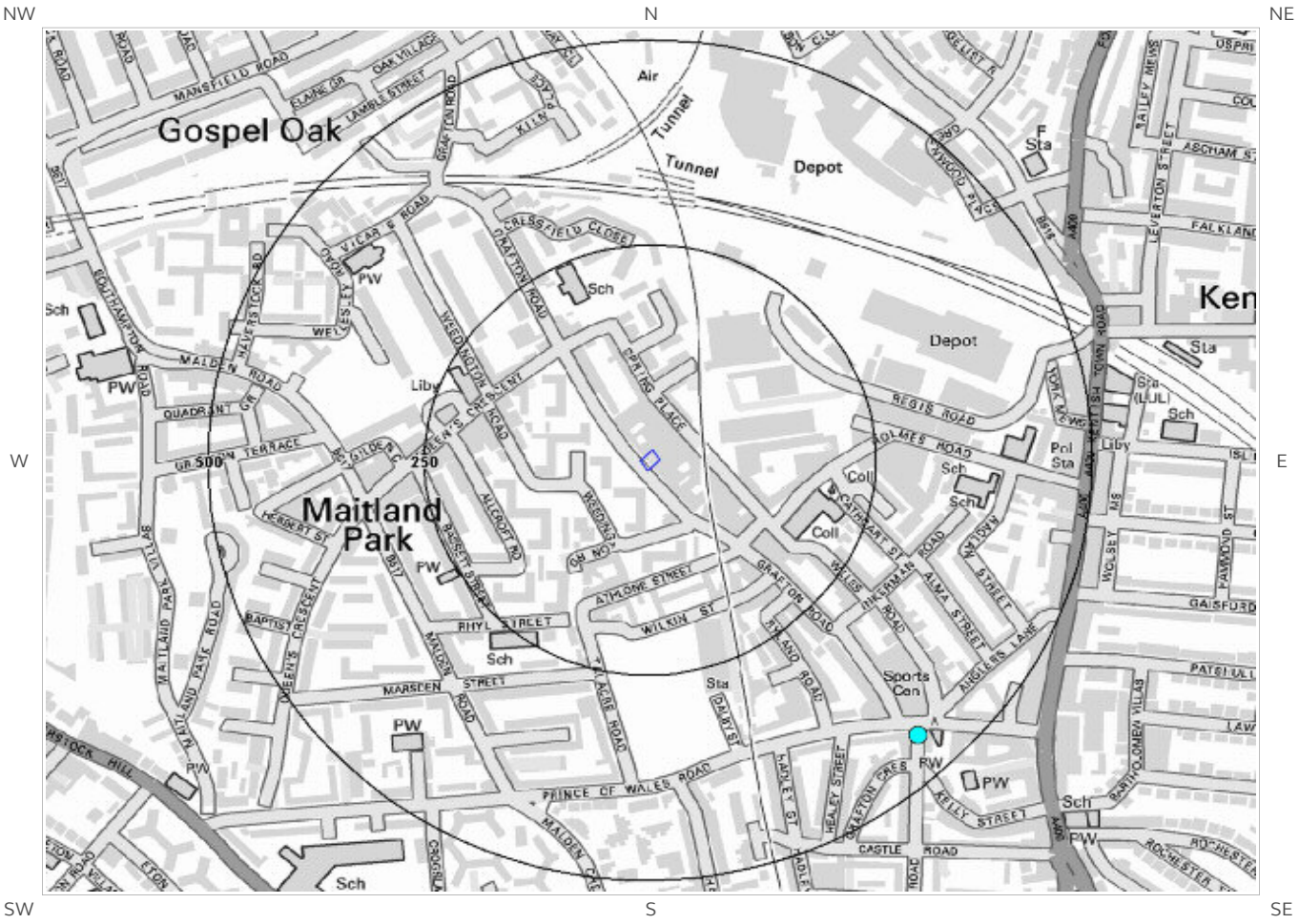
Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



Site Outline

250 Search Buffers (m)
500

Source Protection Zone 1 - Inner Catchment

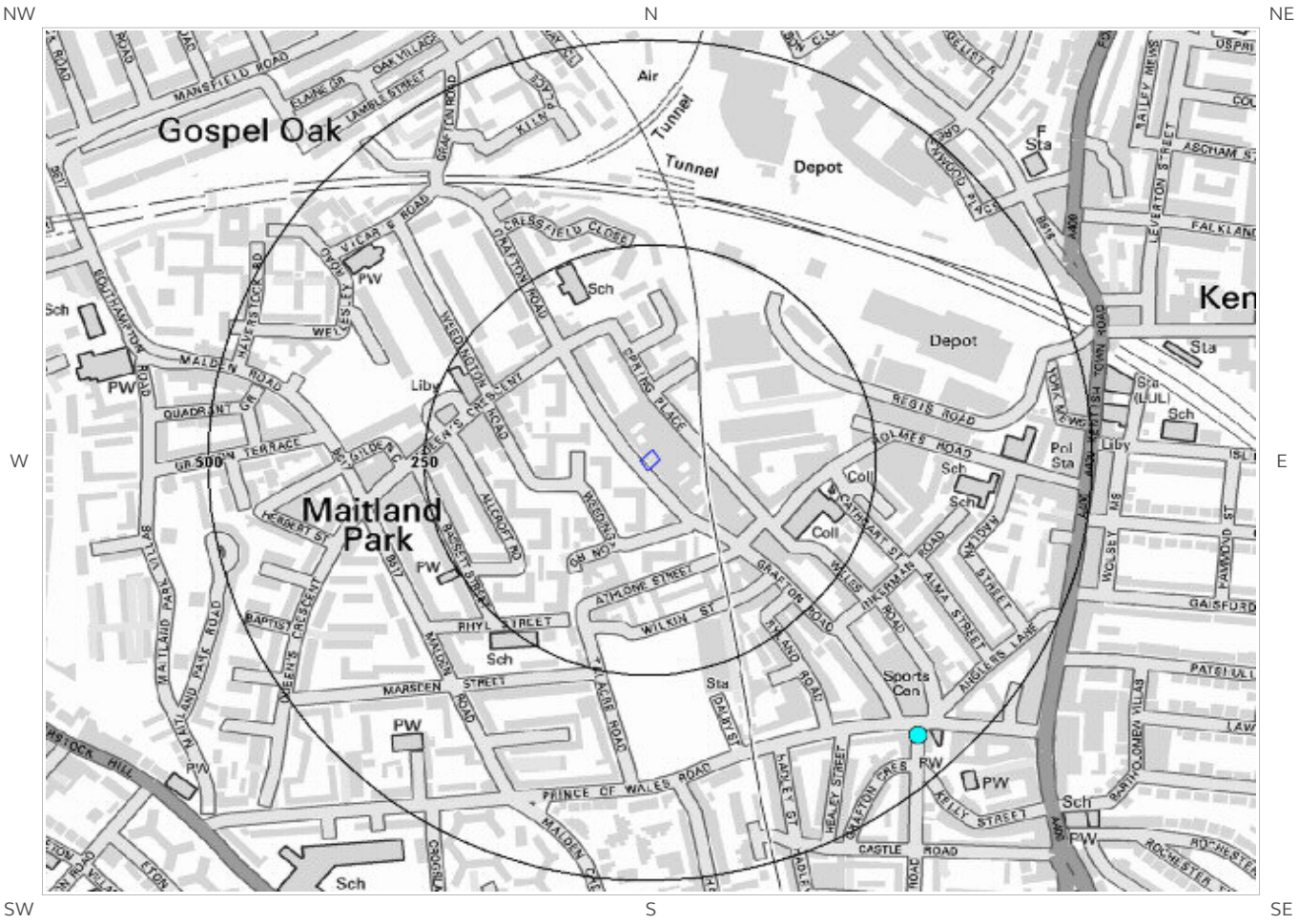
Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



Site Outline

250 — 500 — Search Buffers (m)

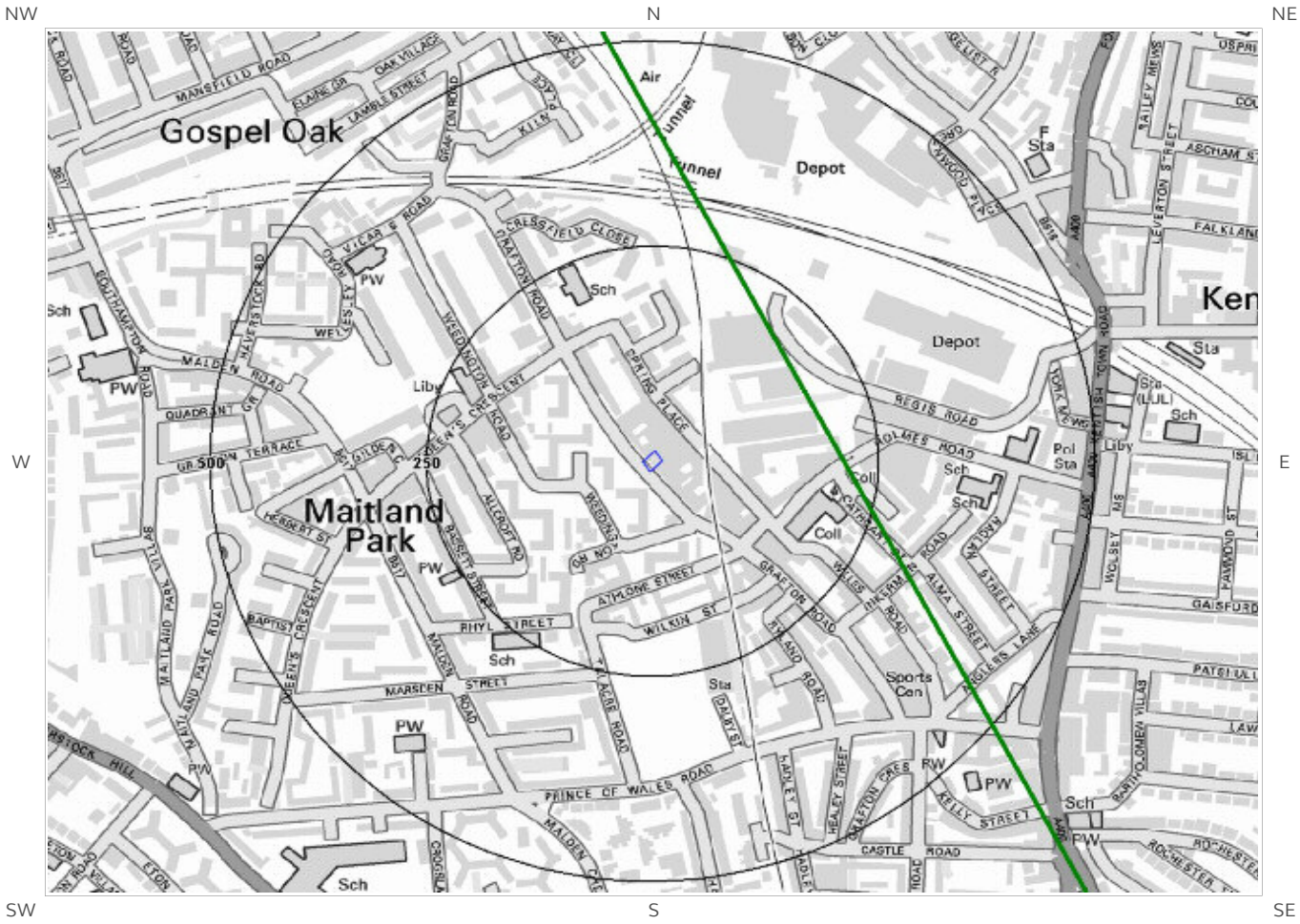
Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

Potable Water Abstraction Licence

6e. Hydrology – Detailed River Network and River Quality



Site Outline

250 — 500 — Search Buffers (m)

Primary River
Secondary River
Tertiary River
Lake/Reservoir
Underground River (inferred)
General Quality Assessment: Biology
General Quality Assessment: Chemistry

Canal
Canal Tunnel
Culvert
Multiple Channel Culvert
Underground River (Potential Sewer)
Underground River (local knowledge)

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? No

Database searched and no data found.

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
2	23	S	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site? Yes

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
3A	449	SE	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m^3): 94506 Max Daily Volume (m^3): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 5/4/2012 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
4A	449	SE	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Process Water Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m^3): 94506 Max Daily Volume (m^3): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 5/4/2012 Version End Date:
5A	449	SE	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Laundry Use Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m^3): 94506 Max Daily Volume (m^3): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 5/4/2012 Version End Date:
6A	449	SE	528800 184700	Status: Active Licence No: 28/39/39/0091 Details: Process Water Direct Source: Thames Groundwater Point: Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LIMITED	Annual Volume (m^3): 17997 Max Daily Volume (m^3): 604.6 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/5/2012 Version End Date:
7A	449	SE	528800 184700	Status: Active Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LIMITED	Annual Volume (m^3): 17997 Max Daily Volume (m^3): 604.6 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/5/2012 Version End Date:
Not shown	1576	SW	527636 183697	Status: Active Licence No: TH/039/0039/058 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Borehole At Barrow Hill Data Type: Point Name: THAMES WATER UTILITIES LTD	Annual Volume (m^3): 631000 Max Daily Volume (m^3): 2000 Original Application No: NPS/WR/009229 Original Start Date: 1/4/2013 Expiry Date: 31/3/2025 Issue No: 1 Version Start Date: 1/4/2013 Version End Date:
Not shown	1580	SW	527640 183690	Status: Historical Licence No: 28/39/39/0231 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Barrow Hill Pumping Station - Borehole Data Type: Point Name: THAMES WATER UTILITIES LTD	Annual Volume (m^3): 631000 Max Daily Volume (m^3): 2000 Original Application No: WRA/R/1026 Original Start Date: 1/4/2007 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: 1/4/2007 Version End Date:
Not shown	1580	SW	527640 183690	Status: Historical Licence No: 28/39/39/0202 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Barrow Hill Pumping Station - Borehole Data Type: Point Name: THAMES WATER UTILITIES LTD	Annual Volume (m^3): 631000 Max Daily Volume (m^3): 2000 Original Application No: WRA/2/2(24) Original Start Date: 26/9/2002 Expiry Date: 31/3/2007 Issue No: 1 Version Start Date: 26/9/2002 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1695	S	528000 183400	Status: Historical Licence No: 28/39/39/0035 Details: Animal Watering & General Use in non Farming situations Direct Source: Thames Groundwater Point: Borehole At Regent's Park, London Nw1 Data Type: Point Name: ZOOLOGICAL SOCIETY OF LONDON	Annual Volume (m^3): 681.9 Max Daily Volume (m^3): 59 Original Application No: - Original Start Date: 4/4/1966 Expiry Date: - Issue No: 100 Version Start Date: 4/4/1966 Version End Date:
Not shown	1733	SE	529920 184040	Status: Historical Licence No: 28/39/39/0222 Details: General Use Relating To Secondary Category (High Loss) Direct Source: Thames Groundwater Point: Kings Cross Concrete Plant-borehole Data Type: Point Name: HANSON QUARRY PRODUCTS EUROPE LTD	Annual Volume (m^3): 55200 Max Daily Volume (m^3): 200 Original Application No: GEN/39/ Original Start Date: 31/8/2006 Expiry Date: 31/3/2010 Issue No: 1 Version Start Date: 31/8/2006 Version End Date:
Not shown	1733	SE	529920 184040	Status: Active Licence No: TH/039/0039/027 Details: General Use Relating To Secondary Category (High Loss) Direct Source: Thames Groundwater Point: Kings Cross Concrete Plant-borehole Data Type: Point Name: HANSON QUARRY PRODUCTS EUROPE LTD	Annual Volume (m^3): 33400 Max Daily Volume (m^3): 200 Original Application No: NPS/WR/011609 Original Start Date: 21/4/2010 Expiry Date: 31/3/2019 Issue No: 2 Version Start Date: 13/8/2012 Version End Date:
Not shown	1841	SW	526800 184280	Status: Historical Licence No: 28/39/39/0219 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Swiss Cottage Open Space- Borehole Data Type: Point Name: LONDON BOROUGH OF CAMDEN	Annual Volume (m^3): 10512 Max Daily Volume (m^3): 28.8 Original Application No: WRA/N/1407 Original Start Date: 12/8/2005 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: 1/4/2008 Version End Date:
Not shown	1895	SW	526750 184261	Status: Active Licence No: TH/039/0039/087 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Swiss Cottage Open Space- Borehole Data Type: Point Name: LONDON BOROUGH OF CAMDEN	Annual Volume (m^3): 10512 Max Daily Volume (m^3): 28.8 Original Application No: NPS/WR/014567 Original Start Date: 5/12/2013 Expiry Date: 31/3/2025 Issue No: 1 Version Start Date: 5/12/2013 Version End Date:
Not shown	1895	SW	526750 184261	Status: Active Licence No: TH/039/0039/087 Details: General Washing/Process Washing Direct Source: Thames Groundwater Point: Swiss Cottage Open Space- Borehole Data Type: Point Name: LONDON BOROUGH OF CAMDEN	Annual Volume (m^3): 10512 Max Daily Volume (m^3): 28.8 Original Application No: NPS/WR/014567 Original Start Date: 5/12/2013 Expiry Date: 31/3/2025 Issue No: 1 Version Start Date: 5/12/2013 Version End Date:
Not shown	1895	SW	526750 184261	Status: Active Licence No: TH/039/0039/087 Details: Lake & Pond Throughflow Direct Source: Thames Groundwater Point: Swiss Cottage Open Space- Borehole Data Type: Point Name: LONDON BOROUGH OF CAMDEN	Annual Volume (m^3): 10512 Max Daily Volume (m^3): 28.8 Original Application No: NPS/WR/014567 Original Start Date: 5/12/2013 Expiry Date: 31/3/2025 Issue No: 1 Version Start Date: 5/12/2013 Version End Date:

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Yes

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1003	S	528490 184020	Status: Historical Licence No: 28/39/39/0173 Details: Non-Evaporative Cooling Direct Source: Thames Surface Water - Non Tidal Point: Oval Road, Camden - Grand Union Regents Canal Data Type: Point Name: BRITISH WATERWAYS BOARD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 8/12/1994 Expiry Date: - Issue No: 100 Version Start Date: 8/12/1994 Version End Date:
Not shown	1003	S	528500 184020	Status: Active Licence No: 28/39/39/0164 Details: Non-Evaporative Cooling Direct Source: Thames Surface Water - Non Tidal Point: Southampton Bridge, London, Nw8 - Regents Canal Data Type: Point Name: Canal and River Trust	Annual Volume (m^3): 7010000 Max Daily Volume (m^3): 19520 Application No: - Original Start Date: 18/7/1980 Expiry Date: - Issue No: 101 Version Start Date: 17/12/2007 Version End Date:
Not shown	1902	SE	529750 183600	Status: Historical Licence No: 28/39/39/0172 Details: Make-Up or Top Up Water Direct Source: Thames Surface Water - Non Tidal Point: Camley Street Nature Park, London Data Type: Point Name: BRITISH WATERWAYS BOARD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 18/9/1991 Version End Date:
Not shown	1902	SE	529750 183600	Status: Historical Licence No: 28/39/39/0172 Details: Make-Up or Top Up Water Direct Source: Thames Surface Water - Non Tidal Point: Grand Union Canal At Camley Street Nature Park, London Data Type: Point Name: BRITISH WATERWAYS BOARD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 18/9/1991 Expiry Date: - Issue No: 100 Version Start Date: 18/9/1991 Version End Date:

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details	
1A	449	SE	528800 184700	Status: Historical Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Two Bores At Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LTD	Annual Volume (m^3): 94506 Max Daily Volume (m^3): 1813.8 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:

ID	Distance (m)	Direction	NGR	Details	
2A	449	SE	528800 184700	Status: Active Licence No: 28/39/39/0091 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Kentish Town Sports Centre, Prince Of Wales St Data Type: Point Name: GREENWICH LEISURE LIMITED	Annual Volume (m^3): 17997 Max Daily Volume (m^3): 604.6 Original Application No: NPS/WR/010565 Original Start Date: 13/6/1966 Expiry Date: - Issue No: 101 Version Start Date: Version End Date:
Not shown	1576	SW	527636 183697	Status: Active Licence No: TH/039/0039/058 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Borehole At Barrow Hill Data Type: Point Name: THAMES WATER UTILITIES LTD	Annual Volume (m^3): 631000 Max Daily Volume (m^3): 2000 Original Application No: NPS/WR/009229 Original Start Date: 1/4/2013 Expiry Date: 31/3/2025 Issue No: 1 Version Start Date: Version End Date:
Not shown	1580	SW	527640 183690	Status: Historical Licence No: 28/39/39/0202 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Barrow Hill Pumping Station - Borehole Data Type: Point Name: THAMES WATER UTILITIES LTD	Annual Volume (m^3): 631000 Max Daily Volume (m^3): 2000 Original Application No: WRA/2/2(24) Original Start Date: 26/9/2002 Expiry Date: 31/3/2007 Issue No: 1 Version Start Date: Version End Date:
Not shown	1580	SW	527640 183690	Status: Historical Licence No: 28/39/39/0231 Details: Potable Water Supply - Direct Direct Source: Thames Groundwater Point: Barrow Hill Pumping Station - Borehole Data Type: Point Name: THAMES WATER UTILITIES LTD	Annual Volume (m^3): 631000 Max Daily Volume (m^3): 2000 Original Application No: WRA/R/1026 Original Start Date: 1/4/2007 Expiry Date: 31/3/2013 Issue No: 1 Version Start Date: Version End Date:

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site? No

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? No

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site? No

Database searched and no data found.

6.9 River Quality

Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site? Yes

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	1136	SE	529150 184100	River Name: Grand Union Canal (paddington Arm) Reach: Canal Feeder - Camden Road End/Start of Stretch: End of Stretch NGR	F	F	F	F	E

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site? Yes

The following Detailed River Network records are represented on the Hydrology Map (6e):

ID	Distance (m)	Direction	Details	
1	185	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined

6.11 Surface Water Features

Are there any surface water features within 250m of the study site? No

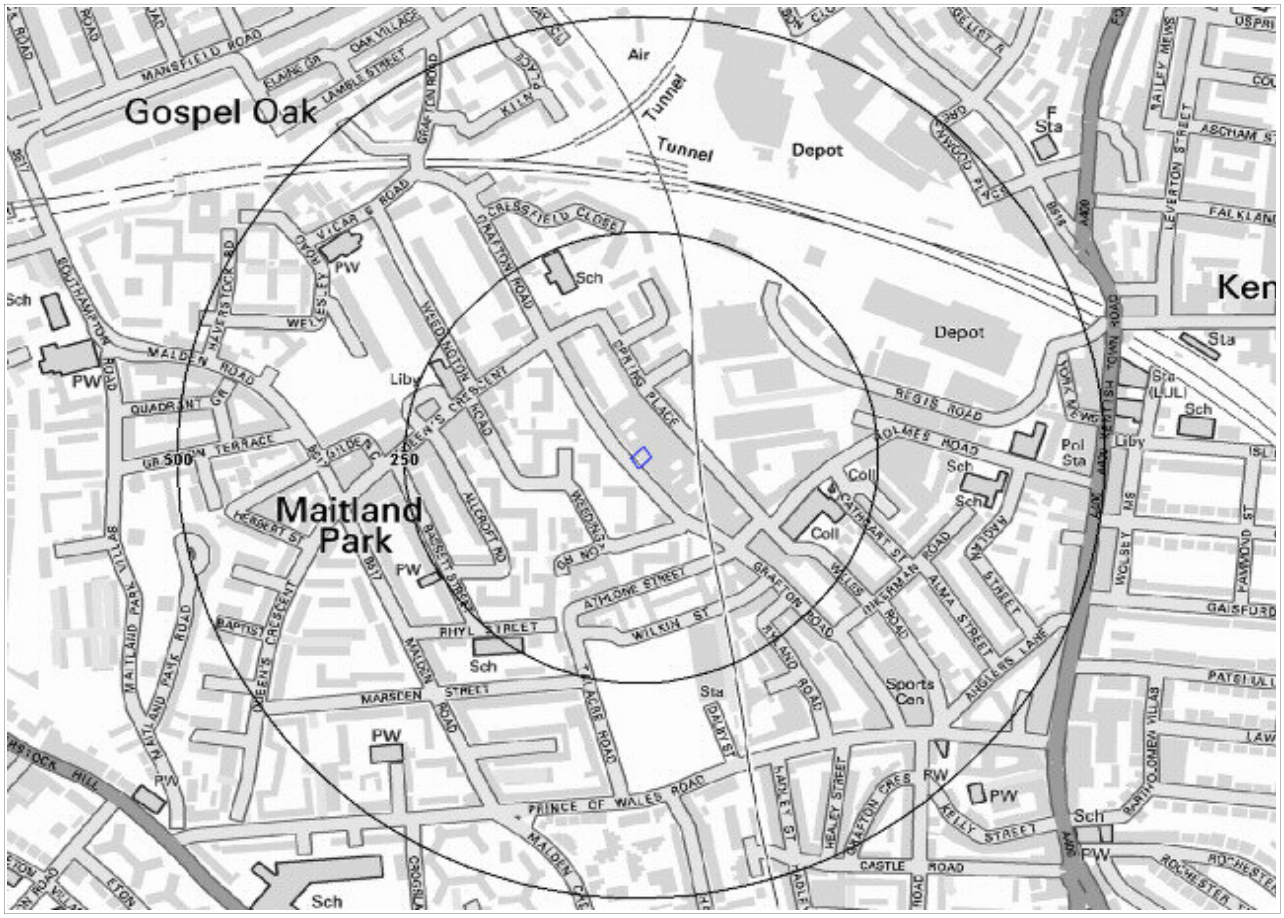
Database searched and no data found.

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)

NW N NE

W E

SW S SE



Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

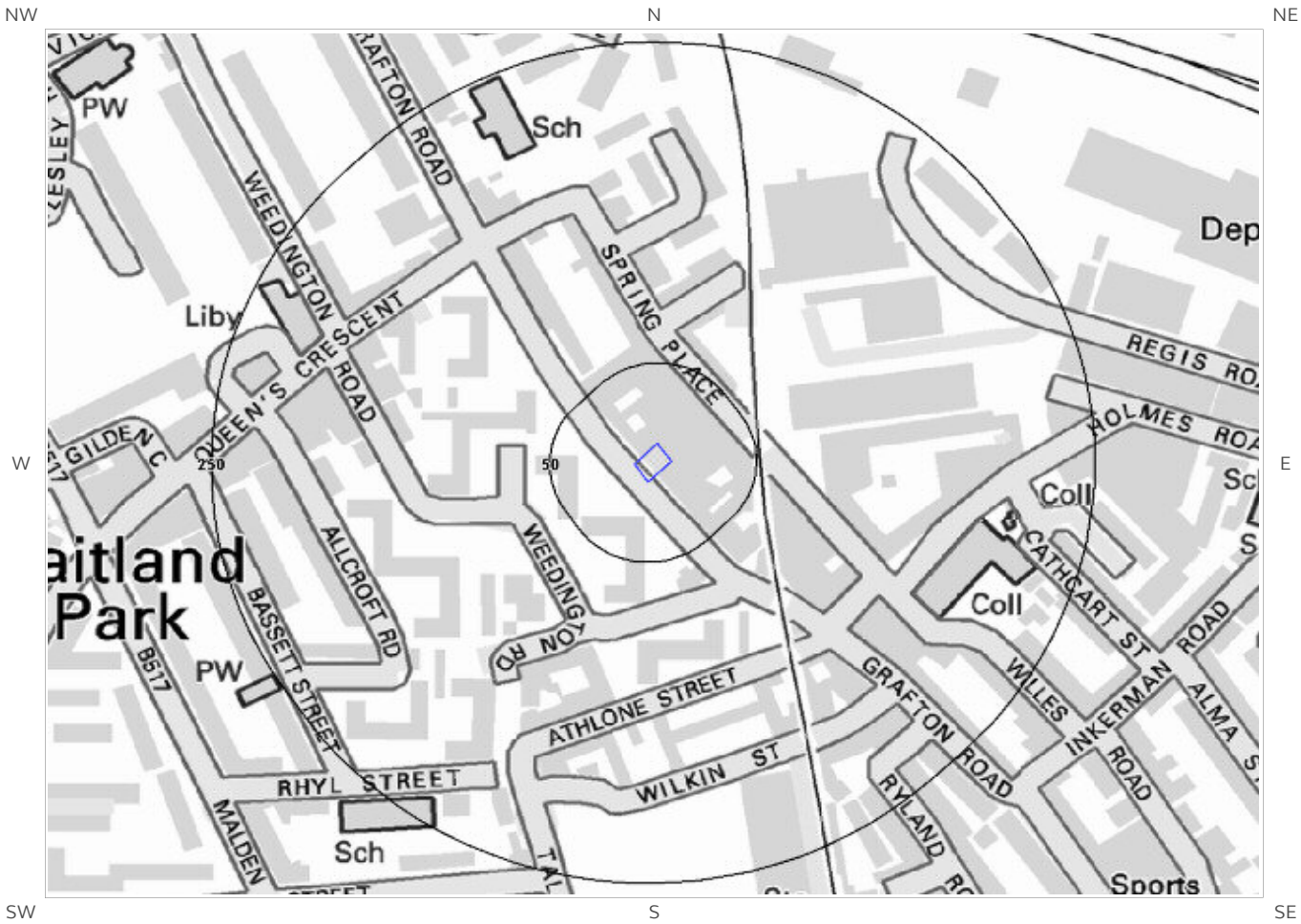
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



Site Outline

100 250 Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? No

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? No

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

---

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? No

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

7.8 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result? Not Applicable

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map

Site Outline
100
250
Search Buffers (m)

AONB
National Park
SSSI
Special Protection Areas
Nitrate Vulnerable Zones
Green Belt
Environmentally Sensitive Areas
Special Areas of Conservation
World Heritage Sites
Nitrate Sensitive Areas
Ancient Woodland
National Nature Reserve
Local Nature Reserves
Ramsar Sites

8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site?	Yes

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

0

Database searched and no data found.

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

1

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
1	972	W	Belsize Wood	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site? Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

What is the maximum Running Sand** hazard rating identified on the study site? Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

* This indicates an automatically generated 50m buffer and site.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing
ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? No

Database searched and no data found.

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No
Guidance: No Guidance Required.

Contact Details

Groundsure Helpline
Telephone: 08444 159 000
info@groundsure.com

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506
Web: **www.environment-agency.gov.uk**
Email: enquiries@environment-agency.gov.uk

Public Health England
Public information access office
Public Health England, Wellington House
133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe
Email:**enquiries@phe.gov.uk**
Main switchboard**: 020 7654 8000**

The Coal Authority
200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
Adanac Drive, Southampton
SO16 0AS
Tel: 08456 050505

Local Authority
Authority: London Borough of Camden
Phone: 020 7974 4444
Web: http://www.camden.gov.uk/
Address: Camden Town Hall, Judd Street, London, WC1H 9JE

Gemapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

Standard Terms and Conditions

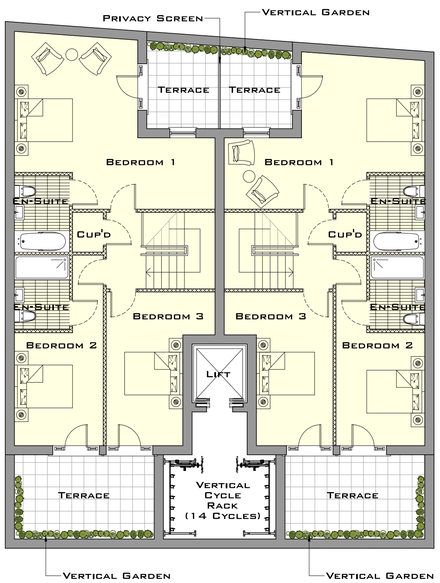
Groundsure's Terms and Conditions can be viewed online at this link:
https://www.groundsure.com/terms-and-conditions-sept-2016

APPENDIX B

Site plans

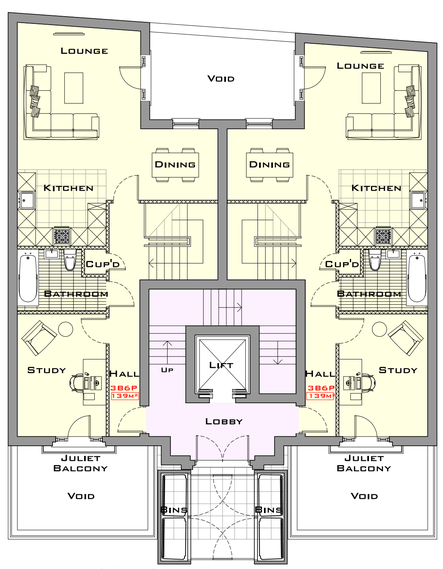
128-130 Grafton Road

Kentish Town, London



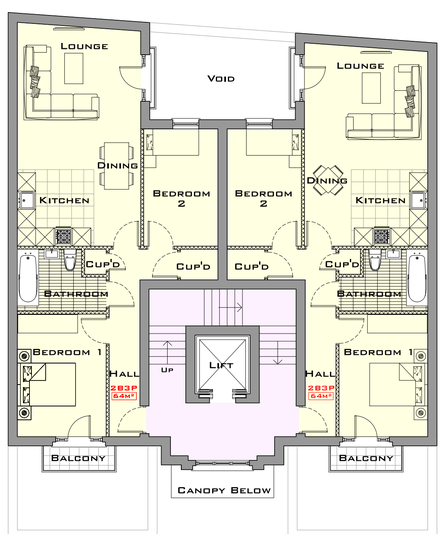
1 Proposed Basement Floor Plan

Scale: 1:100



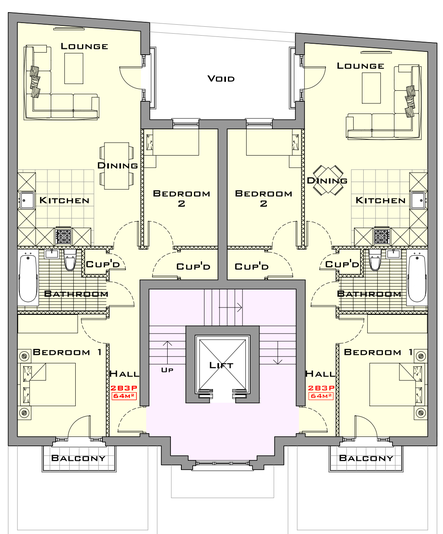
2 Proposed Ground Floor Plan

Scale: 1:100



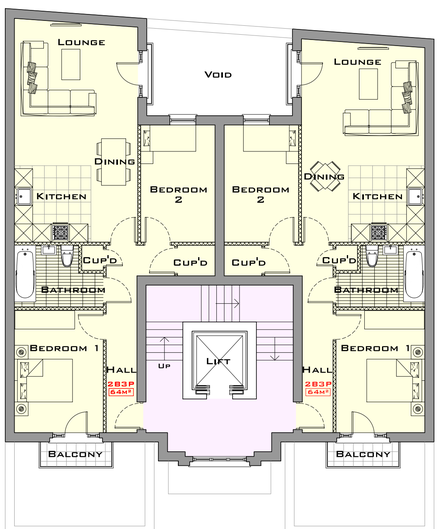
3 Proposed First Floor Plan

Scale: 1:100



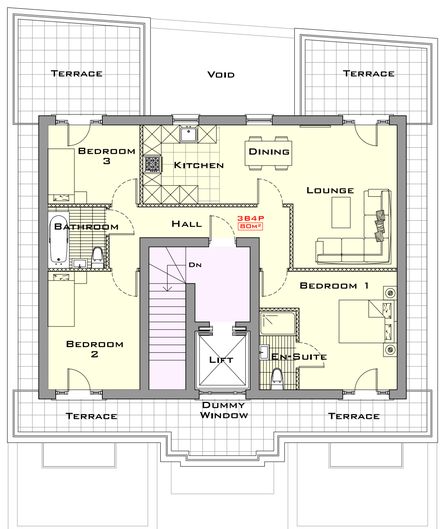
4 Proposed Second Floor Plan

Scale: 1:100



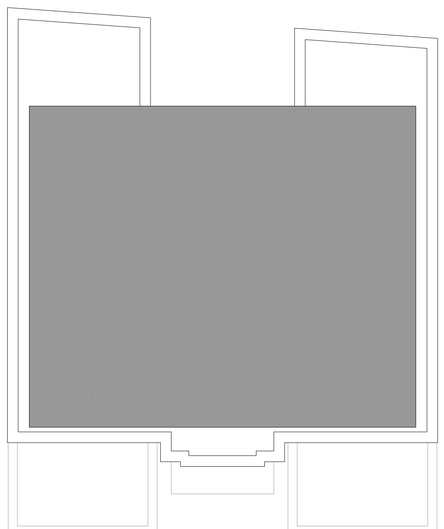
5 Proposed Third Floor Plan

Scale: 1:100



6 Proposed Penthouse Floor Plan

Scale: 1:100



7 Proposed Roof Plan

Scale: 1:100

scale 1:100

0 1 2 3 4 5 6 7 8 9 10 [m]

Project: 128–130 GRAFTON ROAD, KENTISH TOWN	Drawing number: 06
Date: 25.07.2017	PROPOSED PLANS
Scale: 1:100 @ A1	

APPENDIX C

Site investigation data

Trial Pit Log

Project Name: 128 - 130 Grafton Road	Client: Ground and Project Consultants Ltd	Date: 01/02/2019
Location: London, NW5 4BA	Contractor:	
Project No. : GWPR2985	Crew Name:	Equipment:

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP1	TP		MM/RJT	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20	D					MADE GROUND: Dark brown to brown sandy gravelly clay. Sand is fine to coarse grained. Gravel is fine to medium sub-angular to rounded flint and brick.
		0.50	D					
		0.80	D					
		1.00	D		1.00			
		1.15	D		1.15			HEAD DEPOSITS: Brown sandy gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse sub-angular to rounded flint.
								End of Borehole at 1.150m

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

No groundwater encountered. Roots noted to 0.80m bgl.

Trial Pit Log

Project Name: 128 - 130 Grafton Road	Client: Ground and Project Consultants Ltd	Date: 01/02/2019
Location: London, NW5 4BA	Contractor:	
Project No. : GWPR2985	Crew Name:	Equipment:

Location Number	Location Type	Level	Logged By	Scale	Page Number
TP2	TP		MM/RJT	1:25	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20	D					MADE GROUND: Dark brown to brown sandy gravelly clay. Sand is fine to coarse grained. Gravel is fine to medium sub-angular to rounded flint and rare brick.
		0.50	D					
		0.80	D					
		1.00	D		0.95			
					1.00			HEAD DEPOSITS: Dark brown to brown slightly sandy gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to medium sub-angular to rounded flint.
								End of Borehole at 1.000m

1
2
3
4
5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks

No groundwater encountered. Roots noted to 1.00m bgl.

Percussion Drilling Log

Project Name: 128 - 130 Grafton Road	Client: Ground and Project Consultants Ltd	Date: 01/02/2019
Location: London, NW5 4BA	Contractor:	
Project No. : GWPR2985	Crew Name:	Drilling Equipment:

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
WS1	WLS		MM/RJT	1:50	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20	D					MADE GROUND: Dark brown to brown orange sandy gravelly clay. Sand is fine to coarse grained. Gravel is fine to coarse sub-angular to rounded flint. Rare brick. Becomes sandier with depth.
		0.50	D					
		0.80	D					
		1.00	D		1.00			
		1.00	SPT	N=2 (1,0/1,0,0,1)				MADE GROUND: Dark brown to brown orange sandy gravelly clay. Sand is fine to coarse grained. Gravel is fine to coarse sub-angular to rounded flint.
		1.50	D					
					1.80			
		2.00	D					LONDON CLAY FORMATION: Medium brown to brown grey slightly sandy CLAY. Sand is fine to coarse grained.
		2.00	SPT	N=8 (2,1/2,2,2,2)				
		2.50	D					
		3.00	D					
		3.00	SPT	N=11 (2,2/3,2,3,3)				
		3.50	D					
		4.00	D		4.00			
		4.00	SPT	N=22 (4,4/4,4,6,8)				LONDON CLAY FORMATION: Dark brown grey CLAY with sand lenses. Sand is fine to coarse grained. Selenite observed throughout.
		4.50	D					
		5.00	D					
		5.00	SPT	N=22 (4,4/5,6,6,5)				
		5.50	D					
		6.00	D					
		6.00	SPT	N=22 (4,5/5,6,6,5)				
		6.50	D					
		6.70	SPT	N=53 (10,11/10,11,15,17)				
					7.10			End of Borehole at 7.100m

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

No groundwater encountered. Roots noted to 3.00m bgl. Probe refused at 7.10m bgl, potentially claystone.

Percussion Drilling Log

Project Name: 128 - 130 Grafton Road	Client: Ground and Project Consultants Ltd	Date: 01/02/2019
Location: London, NW5 4BA	Contractor:	
Project No. : GWPR2985	Crew Name:	Drilling Equipment:

Borehole Number	Hole Type	Level	Logged By	Scale	Page Number
WS2	WLS		MM/RJT	1:50	Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20	D					MADE GROUND: Orange brown sandy silty gravelly clay. Sand is fine to coarse grained. Gravel is fine to coarse sub-angular flint.
		0.50	D					
		0.80	D					
		1.00	D					
		1.00	SPT	N=2 (1,1/1,0,0,1)	1.10			
		1.50	D					HEAD DEPOSITS: Orange brown grey sandy silty gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse sub-angular to rounded flint.
		2.00	D		2.00			
		2.00	SPT	N=6 (1,2/1,1,2,2)				LONDON CLAY FORMATION: Brown grey sandy silty CLAY. Sand is fine to coarse grained. Becoming less grey from 3.5m bgl.
		2.50	D					
		3.00	D					
		3.00	SPT	N=9 (2,2/2,2,3,2)				
		3.50	D					
		4.00	D					
		4.00	SPT	N=11 (2,3/2,3,3,3)				
		4.50	D					
		5.00	D					
		5.00	SPT	N=17 (2,3/4,4,4,5)				
		5.50	D					
		6.00	D					
		6.00	SPT	N=21 (4,4/5,5,5,6)				
					6.45			End of Borehole at 6.450m

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

No groundwater encountered. Roots noted to 1.50m bgl. Probe refused at 6.45m bgl. Claystone potentially encountered.